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ABSTRACT

Summarizing current developments in nonuniversity higher education (NHE) internationally, this paper provides national composites illustrating the status of programming, delivery, organization, and governance of NHE programs across the globe. First, introductory materials define NHE as education beyond postsecondary or postcompulsory years primarily designed to provide preparation for work, community education, or preparation for university enrollment. Next, brief descriptions are provided of the history of and current developments related to NHE for over 80 countries in the Far Pacific and Asia, the Pacific Rim, the Caribbean, Central America, South America, Africa, Middle East, Eastern Europe, Central Europe, Scandinavia, Great Britain, and North America. Many descriptions include a list of institutions visited by the author in onsite research. The next section then reviews the original motivations for developing NHE programs and reviews negative assessments from the experiences of the countries discussed in the paper, including the ineffectiveness of vocational-technical programs that do not include a general studies component and persistent difficulties in transferring credits from NHE programs to universities. Finally, issues related to the future of the NHE movement are reviewed, including the rapid increase of consortia; the rapid growth of institutes of technology; and the growth of electronically delivered coursework, which affects traditional transfer routines. Contains 89 references. A list of institutions offering NHE programs in selected countries is appended. (TGI)

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Nonuniversity Postcompulsory/Postsecondary Education

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NONUNIVERSITY POSTCOMPULSORY/POSTSECONDARY EDUCATION

Frederick C. Kintzer - 1996

INTRODUCTION - DEFINITIONS - HISTORY

For most of this century, educators and politicians throughout the world have, during various peak intervals, discussed plans for reforming higher education systems. Lack of accessibility to education after postcompulsory/postsecondary years, lack of programmatic diversity, and the administrative inflexibility of university-dominated systems were, and continue to be, major deterrents in the efforts to accommodate societal demands for broader participation, maintaining national economic stability, and gearing up for technological advancement. Reforms appeared either as a restructuring or an extension of secondary education (the United States' case having begun early in the century), expansion of existing higher education units into comprehensive universities, or as new institutions separate from both secondary and university systems (again, the United States case). All three options were utilized in some countries.

The purpose of this writing is to summarize changes in nonuniversity education occurring on every continent. Some of the national composites will be viewed entirely in an historical context - early developments in Sri Lanka (Ceylon), India, Chile, Vietnam, Iran and Iraq, the Philippines, and several other nations - where the short-cycle venture no long exists, at least not in the original form. Other national profiles will point to the current status of such changes. This document, one of the few offering worldwide glimpses of the various types of nonuniversities, will conclude with speculations on the future of the movement. References containing materials on specific countries complete the essay. This selected bibliography contains information about countries where significant change is occurring, or where recent innovative attempts deserve mention. The final section of the document contains a general bibliography.

The ordering of the composites begins with the Far Pacific and Asia and ends with North America - Canada. Material on the United States will necessarily be brief because the literature on the subject is voluminous. On a personal note, since the collection represents some 35 years of traveling, advising, and writing, the year dates appearing in parenthesis immediately after the names of nations indicate when the author served under government or university contracts, or visited independently. Universities and nonuniversities visited from 1942 through 1995 are shown in bold type.

For this writing, nonuniversity higher education is defined as education beyond postsecondary or postcompulsory years (varying from 6 to 12 years) primarily designed to provide one or more of the following: (1) preparation for work - diplomas or certificates often the entry to government qualifying examinations, (2) community education- adult and continuing, and (3) preparation for university enrollment- permission to take university entrance examinations, or to enroll in university degree programs with advanced standing credit. Awards are diplomas, certificates or, in a few nations, degrees less than the baccaleaurate. These institutions, variously called prep colleges (matriculation schools), technical institutes, junior colleges, community colleges, regional or district colleges, or university colleges or centers, are both public and private, and if public, are invariably governed, supervised, and financed by the national government. Nonuniversity characteristics predominate, i.e., emphasis in teaching, administratively similar to secondary

schools, more part-time students and faculty. Institutions involved are also less expensive to enter and to maintain by governments than universities. Private short-cycle institutions are invariably expensive, and in some nations, selective admissions criteria obtain.

Earliest attempts to counteract the deterrents to meeting societal demands for more educational opportunities occurred in the United States. The junior college movement, primarily postsecondary extensions beginning in the first decade of the century, has been thoroughly documented. However, only slight attention in the literature has been given to developments in other countries, first in India in the early 1960s with discussions beginning in the middle 1950s just a decade after independence, in Chile in the early 1960s, and Sri Lanka (Ceylon) in the late 1960s. Names associated with these nonuniversity systems varied from "junior college" in India, "collegios universitarios regionnales" in Chile, and "junior university colleges" in Ceylon. Not until OECD direct involvement in the early 1970s did the term "short-cycle" appear in the literature of postsecondary education change.

Immediately following World War II, particularly in the late 1950s, many nations, notably members of the Organization for Economic Cooperation and Development (OECD) were actively engaged in reforming postcompulsory/postsecondary education. Changes were undertaken primarily to offer a greater diversity of relevant training to accommodate large segments of the society and to gear up for technological advances. Reforms appeared either as a restructuring or an extension of secondary education (having begun in the United States much earlier in the century), expansion of existing higher education units into comprehensive universities (the Chile experience) or as new institutions separate from both the secondary and university systems (again the United States, Canada, Norway, and others). All three options, as suggested in the national composites presented in the next section of this essay, were utilized in a single country.

The term, short-cycle, emerged from an international meeting of delegates from five nations held in November 1971 at Grenoble, France. Organized by the OECD (Paris) Secretariat, conference delegates concentrated on major problems facing the institutions of the several nations. The five countries represented were Norway, United States, Yugoslavia, France, and Britain. Distinctions were made among four terms: Short-Cycle Higher Education, First-Cycle Higher Education, Short-Cycle Higher Education Institutions (SCIs), and University Branches, in the volume, Short-Cycle Higher Education: Search for Identity, published by OECD in 1973. Detailed descriptions of the nations represented and discussions of key issues were included.

Several other books were published by OECD in the 1970s before the topic was deemphasized (see general bibliography). Beyond Compulsory Education (1976) contains a detailed discussion of arguments for and against extending the compulsory age in member countries beyond 15-16, and descriptions of reform plans to expand vocational-technical education by merging structures in Germany, Norway, and Italy, or to develop separate types such as the U.S. community college. A wide variety of working models was introduced, including the Swedish integrated school model, the Yugoslavian vise skole, and the shift of vocational training from traditional apprenticeships to inschool courses in Austria, Denmark Ireland, and Switzerland. The diversity of opportunities rapidly spreading across Europe and elsewhere in the 1960s and '70s, represented an attempt to extend opportunities to work in developing technologies. The other volume, Students in Short-Cycle Higher Education, (also 1976) concentrated on short-cycle developments in France, Great Britain, and Yugoslavia in terms of student populations. The authors conclude that vocational-oriented post-compulsory training should be developed immediately after the uppersecondary and some at the SCI-level., and also some in long-cycle higher education - the universities Two others,

one on compulsory schooling, and the other on higher education policies, were issued by OECD in 1983. (See Selected Bibliography).

A series of monographs published by the European Centre for Higher Education in Bucharest (UNESCO) between 1983 and 1998 provides information on higher education developments in countries of Eastern Europe, Central Europe, the former Soviet Union, and Scandinavia,. However, these contain only short sections on nonuniversities. A few with pertinent information on nonuniversities are cited in the selected bibliography. Another series of greater significance on understanding nonuniversity developments in various nations is the World Education Series published regularly for three decades by the American Association of Collegiate Registrars and Admissions Officers, Washington, DC.
Several of these are also cited in the selected bibliography for the convenience of the next generation of researchers.

Although OECD convened delegates from several European countries in Paris in 1970, papers read and discussed on plans for postsecondary education were not published. However, a statement from the German delegation, according to Medsker (1972), reflected the philosophic thought of other European leaders on the importance of democratizing higher education. The 1973 publication of Search for Identity was, therefore, pivotal in the chronology of nonuniversity developments, because, in part, solutions were presented in detail in the actual developing systems, and the exhaustive review of common issues.

Terminology distinctions mentioned in an earlier paragraph should be identified that led to the justification of a variety of institutional structures within the nonuniversity category: Short-Cycle Higher Education was defined as postsecondary terminal education for middle-level manpower training; First-Cycle Higher Education referred to the first two years of long-cycle university studies; Short-Cycle Higher Education Institutions was meant to encompass all type of postcompulsory/postsecondary schools differing from universities. The SCIs may sponsor some advanced courses that lead to degrees - the polytechnics of Britain - but they share other characteristics of nonuniversities. Linkages with uppersecondary schools, on the one side, and universities, on the other, especially in terms of student mobility and credit exchange, were referred to as a new and pressing problem requiring immediate attention (OECD, 1973).

Leland L. Medsker's monograph published in 1972 by the University of California, Berkeley, Center for the Study of Higher Education the year after the OECD meeting is the only other major resource on the short-cycle phenomenon. Barbara Burn's book, Higher Education in Nine Countries (1972) reflects on short-cycle potential without citations. Several reports issued by the Carnegie Commission on Higher Education and the Commission of Postsecondary Education in Ontario comment on the need for universal accessibility, diversity, and flexibility in postsecondary education. The extended article by Frederick C. Kintzer found in Higher Education v.13 (1984), entitled Short-Cycle Higher Education: Purposes and Issues, was the next substantial contribution to the depleted literature on short-cycle education. The above citations are found in the general bibliography.

The following national composites, presented alphabetically in broad geographic regions, contain summaries with historical significance, and/or current developments of strategic importance - programming, delivery, organization/governance, linkages, etc. Again, dates in bold face simply identify places (universities, nonuniversities, and government centers) visited by the author. Obiously, not all countries supporting nonuniversities are

included, only those showing the greatest activity, and a representative sampling of others that are historically significant nonuniversity prototypes.

Although the term, short-cycle higher education, is still found in what little writing is appearing in the literature, titles of the actual institutions vary considerably - "junior college," "community college," "technical institute," "regional" or "district college," "academies," and "polytechnics" are most popular. "Short-cycle" remains the European descriptor. The author favors "short-cycle higher education" as the generic name for postcompulsory/postsecondary nonuniversity education. The term implies short term courses and curriculums in all categories of postsecondary education.

While the Grenoble meeting was the only international event entirely devoted to nonuniversity education, two other conferences sponsored by OECD in Paris in 1976 and 1978 on the broad topic of "institutional management" scheduled sessions including the author's papers on the short-cycle phenomenon, thus encouraging the continuance of discussions among attendees, and a few much needed articles. Another OECD-sponsored conference on policies for higher education held in 1983 included papers on pertinent short-cycle topics such as access and relationships between higher education and the working world. However, the nonuniversity segment was not specified.

Following a summary profile of the United States, comments on the future of short-cycle higher education are offered. This final section opens with the reasons why SCHEs were created and developed, mention of the several programmatic types found in the national composites, identification of negative assessments, and a review of recent significant developments.

FAR PACIFIC AND ASIA

AUSTRALIA (from Tasmania - north - 1974 and 1981). The present two-tier system of higher education in Australia developed from a three-tier system; universities, institutes of colleges (as named in the 1964 Martin Report), and boards of teacher education. In the late 1960s, the second classification became the colleges of advanced education, and by 1973, the teacher education sector had merged with the CAE system. The Colleges of Advanced Education continued as the second tier through the 1980s. The colleges resembled universities in awarding some degrees, but by the original design, emphasized practical professional and semiprofessional studies, and applied research. Professors in specialized fields were frequently part-time.

A system of Technical and Further Education Institutes or Colleges appeared in the early 1970s as the third tier. With the closing of the CAEs, the TAFE system became the second tier unit of higher education. (Kintzer, 1981). The TAFE system, most numerous in New South Wales, heavily emphasizes trades and technologies. Public and state-operated TAFE counterparts are now located in most states. Community Colleges with strong adult and continuing or recurrent education components are gradually spreading, notably in the south and west. So-called "technical institutes" are more like junior technical schools. Matriculation schools, found in Tasmania, funnel boys into short-cycle colleges to prepare to qualify for university entrance examinations.

As mentioned, the CAE's are now defunct. Closely resembling the British polytechnics, these colleges, offering both long- and short-cycle degrees, operated for a generation as broader based institutions serving more Australians than the universities.

Continuing the TAFE discussion, each TAFE college is managed through its own council. Students can choose from eight different course levels, including two year associate diploma courses, advanced certificate courses, and apprentice and regular certificate courses. TAFEs are attracting increasing numbers of workers interested in upgrading skills, industry training courses, and continuing education (short courses), all of which resemble the profile of an American community college.

Institutions visited

Tasmania

Elizabeth Matriculation College (Hobart)
Rosney Matriculation College (Hobart)
Centre for Continuing Education, University of Tasmania (Hobart)

Victoria

Victoria Institute of Colleges (Melbourne)
Centre for the Study of Higher Education University of Melbourne

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Victoria Institute of Colleges (Melbourne)
Wesley College (Melbourne)
Warrnambool Institute of Advanced Education (Warrnambool) (2)
University of New England (Armidale)
Manash University (Melbourne) (3)

New South Wales

University of New South Wales (Sydney) (2)
University Institute of Administration (Sydney) (2)
Camberra College of Advanced Education (Canberra)
New South Wales Institute of Technical Education (Sydney) (2)
Sydney Technical Institute
Board of Education (Sydney).

CHINA (PEOPLE'S REPUBLIC). Much like Japan, most nonuniversities are private, offering single-vocational courses. Similar to Taiwan, many are five-years beyond junior high school, and some are two and three-year vocational schools beyond senior high school years. Predicably, a large and complex nonuniversity system will emerge rapidly in that vast country. (See Selected Bibliography, esp. McBreen, et al). A group of two-year vocational universities established in the 1980s are attempting to meet local needs, and the so-called workers' or peasants' colleges run by local governments for senior secondary finishers are providing training primarily in farming and forestry management.

A state higher education system of examinations was established in the 1980s creating graduate diplomas at the regular college level, short-cycle certificates, and individual course certificates.

The People's Republic, along with Malaysia, Taiwan, Singapore, and other Pacific Rim countries, is beginning to offer technical training at industrial settings separate from formal institutions. The BeiNei Group Corporation, makers of engines, is one example. (Hatton, ,1995, in General Bibliography).

REPUBLIC OF KOREA. Although information from North Korea is difficult to obtain, we know that about 50 junior colleges offer teacher training, and over 100 junior and technical colleges offer engineering, agriculture, fisheries, nursing, and business courses. The Korean Educational Development Institute in Seoul continues to engage in higher education research. (See Hong, 1981, in Selected Bibliography).

INDIA (1968 and 1987). A junior or community college system was first officially discussed in a 1962 government report on education integration, but the idea remained only on paper for a decade. In 1972, a community college prototype was opened at New Delhi University as the College of Vocational Studies. Universities in all major cities visited - Madras, Calcutta, Benares, New Delhi, Bombay, and others - currently offer short-term vocational courses. One of the most recent (1991) is the Center for Vocational Education, in Madras. (See Selected Bibliography).

NEW ZEALAND (1981). New Zealand's higher education system is comprised of universities offering diplomas and degrees on the six autonomous campuses of both islands; teachers colleges that engage in a heavy resurgence of continuing education, and are pressing to become universities; and the technical institute system that includes several polytechnics, community colleges, and senior technical institutes - all nondegree institutions are governed by separate councils for day-to-day decisionmaking but controlled by the Ministry of Education. The world's southernmost community college is located in Invercargill, a bustling town whose bluffs point toward Antarctica.

As mentioned, some technical institutes are now called community colleges, meaning for New Zealand more academic and general education courses as well as community involvement. Third-tier leaders are pressing for freedom from the ministry. The search for status associated with the determination to gain greater autonomy is likely to weaken ties with communities especially in rural areas. Virtually all higher education institutions support outreach programs, and significant numbers of adults are returning to secondary schools. Correspondence education and external study are highly developed. As the weak economy persists, free higher education, once a proud New Zealand commitment, is a thing of the past.

Institutions visited

North Island

Auckland Secondary Teachers College
Auckland Technical Institute
University of Auckland
Northland Community College
Waikato Technical Institute
Waiariki Community College
Hawke's Bay Community College
Wellington Polytechnic
Department of Education, Wellington

South Island

Christchurch Polytechnic
Otago Polytechnic
Southland Community College.

SRI LANKA (1968-69 and 1974). Ceylon's six junior university colleges resulted from the Higher Education Act No. 20 passed by Parliment in 1966, following a visit of I.M.A.A. Iriyagolle, Minister of Education and Cultural Affairs, in Southern California, primarily at Los Angeles Trade Technical College, where he saw homes being built and sold, and an array of technical skills mastered by secondary school graduates. He returned to Ceylon with great enthusiasm to persuade Parliment to action. He named D.J. Nanyakkara as director who who had completed an M.A. in Psychology at UCLA in 1962.. Previous to Nanayakkara, K.A.G.D. Wijewardene had completed a Ph.D. at UCLA in vocational

guidance. As a prominent newspaper editor, he enthusiastically supported and promoted the passage of the Act by parliament. (See Kintzer, 1970, in Selected bibliography).

Three successive Fulbright-Hayes awards beginning in 1967-68 provided advisors for the planning year, then the opening of the colleges, and finally the evaluation of the system. A total enrollment of about 1,000 secondary school graduates began in the six colleges in February 1969. Two-year diploma courses in trades and simple technical skills were distributed among the colleges. English, physical education and library use were required. First classes were graduated in 1970-71 just before the new pro-Soviet government eliminated the system.

A return month-long visit to newly-named Sri Lanka was made in 1974 to attempt to ascertain what had happened to the institutions. Although all six had been summarily closed, all had reverted to some type of educational unit not to resemble the American junior college. The director had been immediately retired and was existing on a meagre pension. Mr. Iriyagolle was removed from office. Some of the system's faculty of the appropriate political persuasion were able to remain in education.

Institutions visited

Ceylon Technical College
Maharagama Teachers College
Palaly Teachers College
Romanthan College
University of Ceylon (main campus, Kandy and Colombo campus)
Vidialankara University
D.S. Senanayake Junior University College (Kuliyapitiya)
Sir Ponnambalam Ramanathan Junior University College (Palaly)
W.A. de Silva Junior University College (Dehiwela, in Colombo)
C.W.W. Kannangara Junior University College (Galle)

C.A. Hewavitarne Junior University College (Kegalle)
Ehelepola Kumarihamy Junior University College (Polgalla).

PACIFIC RIM

Information on short-cycle higher education in Pacific Rim countries, except for Japan, is difficult to obtain. Two recent publications, however, document widespread attention in several Rim nations to occupational training sponsored by industry with and without collaboration of nonuniversities as well as universities. (See Hatton and Hatton, et al., 1995, in General bibliography). While not a new phenomenon particularly in North America and some European countries, industry education appears to be gaining rapidly throughout the vast Pacific region as well as mainland China. Some of these efforts will be mentioned in the following profiles. The phenomenon will be given more attention in the last section of the essay.

JAPAN (1968, 1981). Most Pacific Rim nations have two-tier systems of higher education. Two basic institutions in Japan replaced the prewar multitrack system: universities (long-cycle), and junior colleges, technical colleges, and special training schools that are all short-cycle. (Abe, 1989, in Selected Bibliography). The two systems are classified as formal education. A second grouping of institutions for adult education is divided into two nonformal higher education segments: (1) grand schools, universities of the air, and correspondence education sponsored by long-cycle institutions, and (2) specialized technical schools, junior college level, correspondence education , and college preparatory schools sponsored by short-cycle units. (Kuroha & Kitamura, 1989, in Selected Bibliography).

The duo-track system of nonpractical academic degree education and practical training, an enormously complex organization in Japan, is a strong and mutually supportive relationship. The private sector still dominates formal higher education. More than 70% of university students and 90% of junior college and technical college students enroll in private institutions that are crowded and costly. Compulsory education ends with the ninth grade, but more than 90% continue into senior high schools.

There are over 500 junior colleges in the country, mostly private for females, with single vocational subjects taught, also private technical colleges largely for lowersecondary completers, and a very large number of technical and vocational postsecondary schools (over 2000) to encourage males not qualified for universities. Public nonuniversities are being strengthened. (See Selective Bibliography).

<u>University Centers in Japan</u> (research units on short-cycle higher education).

Research Institute for Higher Education, Hiroshima University (Hiroshima)
National Educational Hall (Tokyo).

HONG KONG (1968, 1987). As Hatton, et al.(1995) report, the escalation of manufacturing and trade between Hong Kong and mainland China has encouraged the electronics industry to provide short-term training for engineers. Accordingly, Hong Kong's Vocational Training Council is collaborating with five Hong Kong universities (two of which are technology universities) to

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offer intensive classes to practicing engineers. Industry donates software and material. This is only one of several such collaborative ventures.

Unfortunately, the Hong Kong Government has recently undergone drastic policy changes in higher education. Restructuring financial responsibilities for higher education as a whole, the Government now operates five universities and heavily supports two private colleges to be elevated to university status. University enrollment has quadrupled, but short-cycle education, formerly provided by several nonuniversities, is no longer available to the general public.. (Tang, 1996, March).

INDONESIA (Bali) (1974). Multiple developments in short-cycle education, mainly on Java in this vast island nation are rapidly appearing. Most vocational education remains secondary, but some academies and polytechnics - have been created. Private sector organizations are satisfying their own training needs independent of public and private institutions. The Worker's Institute of Technology (WIT) in Selangor, Malaysia, is a very large private technical college for human resource development. Funding is provided by national and international unions. (Hatton, 1995, p. 58, in General Bibliography).

MELANESIA (Figi) (1981). Figi has a School of Agriculture and other technical institutes that award technicians diplomas. The University of Hawai operates a community college on Palau, and the American Community College is located in Eastern Samoa Territory, Pago Pago. Northern Marianas College is located in Saipan, an American trust north in the Marianas.

PHILIPPINES (1968). There appear to be more than 20 postsecondary colleges scattered over the islands that stress adult education. The community school system of nonformal groups had achieved popularity before World War 11. As in other Rim nations, the Philippines is building a "dual" approach in industry/institution collaboration. In-plant training is required for industrial technician students under the Dualtech Centre sponsorship. (Ibid., p. v).

REPUBLIC OF CHINA - TAIWAN (1987). Taiwan has over 70 single-vocational junior colleges, about 50 are private, others are operated by provincial or municipal governments. Most are five-year schools (beyond junior high). These two-and-three-year schools admit high school graduates for two-year academic or three-year vocational courses. Substantial emphasis is given to computer techology in all types of SCIs. Entrance exams are required as well as exams for university admission, some credit for work previously taken, and exam preparation for work certificates are all possible. The Republic is also entering into technical training programs provided by industry with or without institutional collaborations. Short-cycle colleges in the U.S., Canada, and Pacific Rim nations are developing joint projects. (See Hatton, et al., 1995).

Institutions visited

National Cheng Kung University (Tainan)
National Kaoshung Institute of Technology
Cheng-hsiu Junior Technical College (Kaoshung)

Tainan Junior Teacher's College
Chin-ye Technical Junior College (Taipei)
Shin Chien College.

SINGAPORE (1968, 1974, 1981) and KUALA LUMPUR, Malaysia, (1968). Singapore Polytechnic and the Singapore Technical Institute, and several others, offer two-year courses leading to industrial technician certificates. Three-year courses are prominent at Poly. Industry/ institution collaborative training has also reached Singapore. Applied projects "capstone" courses are terms used to announce an integrated learning technique between a Singapore polytechnic centre and a corporation.. For example, the Precision Engineering Institute and other training institutes are sponsored by the Singapore Institute of Technical Education. Established as a postsecondary school in 1992, the Institute is the national agency for vocational-technical training. Its broad mission is to expand the country's human resource potential.

THAILAND (1968, including Bangkok). Phuket Community College, Amphoe Muang (below Quala Lumpur) was opened in the 1980s under the Rector's Office of Prince of Songkla University, offering diploma course in Hotel Management and Tourism, Mining Technology, etc, after finishing 12th grades. According to King and Kohler (1995), another community college is now open in the Nongkhai/Udon area in northern Thailand for ESL and short-cycle courses in business and technical subjects. Another institute, King Mongkut's Institute of Technology in north Bangkok operates a cooperative program with the Federation of Thai Industry.

Compulsory education in Thailand ends with the sixth grade. Students can then opt for a three-year secondary school. Exams for university qualification follow. Many (perhaps over 30) teachers' colleges are developing as comprehensive postsecondary institutions. Tuition in private colleges is very expensive and graduation difficult. (See Selected Bibliography).

VIETNAM. As mentioned in the introductory section, a community college system of two public junior colleges, Coastal and Upper Delta, and one private college were established early in the short-cycle worldwide movement (1971).
In 1984 these were merged with universities. However, many specialized postsecondary institutions are continuing. (See Selected Bibliography).

CARIBBEAN - CENTRAL AMERICA - SOUTH AMERICA

CARIBBEAN (1975,1989, 1993) The Caribbean Commonwealth is comprised of 18 terriroties, two are not islands - Belize and Guyana. Compulsory education ends at age 14 to 15. Only about 10 to 20% get to secondary school which is by examination except in Trinidad/Tobago. Most territories have junior secondary schools with three-year terminal programs with chances to transfer to five-year secondary schools. Some secondary schools are academic, similar to British grammar schools, some are academic/general/vocational, either bilateral or with multi-curriculums, and others are comprehensive. Form-five schools lead to the G.C.E. o.rdinary diploma, and form-six to university-prep. Most further education schools are postsecondary, offering teacher education and allied health courses. A variety of names are associated with these non-universities: technical institutes, technical colleges/schools, vocational schools/ centers, and proper names. Puerto Rico Junior College offers Associate in Arts degrees. Guyana has specialized institutions of higher education with two- and three year courses. Haiti offers advanced training in business and engineering at advanced training institutes. Jamaica has four community colleges with transfer possibilities to the university and technology college in Kingston. These and a few other examples are given in the composites listed below.

The University of West Indies serves 14 territories with three regional campuses at Jamaica, Barbados, and Trinidad. Three-year baccalaureate degrees are normal. The ministry is in the process of revamping the exam systems dominated by Britain, with the creation of the Caribbean Exam Council.

BARBADOS (1975) (British West Indies)

University of West Indies-Barbados Campus (1975). The university, independent and regional, serves 14 of the 18 Caribbean territories, with campuses in Barbados, Jamaica, and Trinidad. Many territories have postsecondary nonuniversities. Teacher Education and Allied Health programs are most popular. A few sixth form schools are university preparatory.

DOMINICAN REPUBLIC (former Santa Domingo). Following the Civil War, a junior college was opened in1969 under Ford Foundation and USAID sponsorship and technical help from the staff of Bryant College, Rhode Island. Under the new government, the college became a semiautonomous organization with its own administration and board of directors, and the right to grant two-year degrees. (See Green & Cavello, 1969, in Selected Bibliography).

JAMAICA (1998) (British West Indies). Jamaica has four community colleges offering occupational courses. Transfer arrangements in a few fields are interchanged with the College of Arts, Science and Technology in Kingston.

Institutions visited

College of Arts, Science and Technology (Kingston)
University of West Indies (main campus)
Montego Bay Community College.

PUERTO RICO (1974). (See the initial Caribbean summary).

TRINIDAD and Tobago (1975) (British West Indies). The republic of Trinidad and Tobago has recently announced (Spring 1996) that a community college is being established with the help of Monroe Community College, NY. The new college will operate four current institutes specializing in occupational programs, and will offer A.A. degrees that include general education requirements. American accreditation will be sought to enable students to transfer to U.S. senior institutions. The responsible governmental agency is the republic's National Institute for Higher Educational Research for Science and Technology (NIHERST). This appears to be the first step in establishing an American community college system. Compulsory education is eight years and English is the official language in the republic.

CENTRAL AMERICA

COSTA RICA. The Costa Rica higher education system includes parauniversities or community colleges (public colleges) offering short courses in technical and agricultural studies. Private postsecondary schools also provide courses mostly in commercial and business education. The state universities offer short courses leading to diplomas.

EL SALVADOR. Compulsory schooling is six years plus two or four years of secondary schooling. After four secondary years, vocational schools , by definition, are short-cycle technical or academic institutes.

GUATEMALA (1975). Short-cycle, as in many Latin countries, begins with the upper-secondary. Most such colleges are private with two or three years of vocational training beyond postcompulsory education ending at age 14.

MEXICO (1972, 1974, 1975, 1978). Of all Central and South American countries, Mexico and Argentina are changing most rapidly in the development of short-cycle institutions. The creation of the International Consortium for Economic and Educational Development (ICEED) in 1992 has the potential to ease higher education problems. For generations, Mexico was held back by a rigid centralized national government that acted in good faith to establish a system of technological institutions, but failed to provide proper financing, coordination and supervision. Little attention was accorded rural communities for whom the system was originally created. The continuing dominance of the elitist university system has been, and continues to be, a further deterrent.

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The ICEED now operating as a cooperative effort in several Mexican states and community colleges in Arizona, California, New Mexico, and Texas, is beginning to strengthen the regional technological institutes, and attempting to balance efforts to serve rural communities realistically. (See ICEED bulletins, 1992 and 1993, in Selected Bibliography).

As early as the 1940, Mexican educators recognized the urgent need to decentralize vocational-technical education beyond the secondary years. The federal government responded with a series of technical institutes, reportedly at least one in every state, but failed in the several important respects mentioned above. Students could enter FTIs after nine or eleven years of formal schooling. Among other regulations, ninth grade graduates could take tenth and eleventh grade classes at a FTI. By the late 1940s, the federal system was renamed the regional system in a direct effort to decentralize the effort. Theregional technical institutes also gave up lowersecondary work. Later in the 1970s, a series of technological agricultural institutes were established to provide a wide assortment of technologies. These institutes, a part of the third-tertiary system, specialized in the broad technology assigned.

Simplifying a very complex organization, the Mexican system is three-track: (1) public antonomous universities, decentralized from the national government with full legal powers; (2) public state universities established and maintained by local state assemblies; and (3) regional technological institutes, and other types in many special fields. The third group totals hundreds of institutions. Loosely coordinated by the Secretaira do Educacion Publica (SEP - Ministry of Education), these tertiary schools prepare students for further education as well as specific employment. (Villa, 1982, p. 4). Some of the private schools offering specific technical training are recognized by state governments, meaning that the completion awards are accepted as exam qualifications for certain types of jobs.

The entire system is greatly dispersed and decentralized with little federal and state coordination. Again, oversimplifying a very complicated situation, completion of one of the general academic or technical upper-secondary curriculums is required for admission to any of the tertiary schools. Completion of the bachillerato may not guarantee admission to a particular university, college or institute, but is a general admission "license." In other words, transfer of credits is not specifically guaranteed.

At the time of the World Education Series report prepared by Kitty Villa, six-years of compulsory schooling were required, and free. Secondary education consisted of two levels, three years each. Uppersecondary, leading to tertiary higher education, either academic or technical, lasted up to six years, depending on the academic or vocational subject selected.

Nonformal education was greatly expanded and strengthened by federal legislation by 1975 and 1978. Open education, allowing students at all levels from primary through uppersecondary and tertiary institutions to

earn certificates. Academic uppersecondary curriculums were included in the nonformal system.

The ICEED group, now in its fourth year, is establishing uniformity throughout the third-tier system. The CONALEP network now includes Canada. Technical assistance and faculty and student exchanges should strengthen many of the rural ATIs, and introduce active partnerships with Canadian short-cycle institutions. Partnerships with industry spreading rapidly over the world is a current CONALEP priority.

SOUTH AMERICA

ARGENTINA. For decades, postsecondary nonuniversities have offered higher studies in technical training, teacher training, and the arts. The Federal Education Act of 1993 brought dramatic changes, shifting elementary and secondary education from the central government to the provincial governments, and supporting the development of nonuniversities. According to Holcombe and Greene (1996) about 1500 postsecondary nonuniversity terciarios now offer business administration, teacher training, and allied health programs. Six hundred are private, and about a quarter of all higher education students are enrolled in terciarios. Tuition is free in the public terciarios, as well as in virtually all the 65 public universities which remain relatively inflexible in terms of curricular offerings and transfer of credits, even between university departments.

The history of the reform is a reminder of the Ceylon/Sri Lanka experience. In the late 1980s and early 1990s, many educators and Argentine government officials visited community colleges, notably in Florida, and liked what they saw for the future of their society. A team was organized by Broward Community College officials for a return visit in 1992. Argentina educators were especially interested in learning more about general education, details of articulation and transfer practiced in Florida, university parallel and occupational programs, and community-based governance (Holcombe & Greene, 1996).

Another similarity to the Sri Lanka/Ceylon experience is noted in the name given the new system of nonuniversities by the Argentine National Congress - colegios universitarios (university colleges). These postsecondary institutions are beginning to offer two- and three-year transferable academic programs, as well as vocational technical training. The new institutions, both public and private, will be required to have an agreement with at least one Argentine university. Five university colleges were opened by October 1995. Several have already been named community colleges. (Ibid., p. 42). Decentralization and deregulation are key concepts inthe pattern of this exciting short-cycle development in Argentina.

BELIZE. Belize belongs to the Caribbean Commonwealth. St. John's College, a Catholic community college, is a member of the American Association of Community Colleges.

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SURINAME. The Suriname Ministry of Education sponsors technical and vocational training for teachers. Contiguous to Guyana, the former Dutch colony Dutch Guiana is largely undeveloped. As described by King and Koller (1995), a professional development and transfer credit program is now underway sponsored by the country's telecommunication company. A technical institute under CCID advisement is in the planning stages.

VENEZUELA (1982). Venezuela has four types of SCIs: public pedagogical institutes, public polytechnics, both public and private technological institutes, and several public and private university colleges plus military academies. In 1982, the Ministry of Education sponsored a conference on articulation and transfer, announcing the intention to develop policy. The collapse of the once sturdy economy stifled the plan. However, institutions mentioned below, and others, are still operating.

Institutions visited

Simon Bolivar University - Caracas
Colegio Universitario "Francisco de Miranda" (Caracas)
Colegio Universitario "El Obelisco" Barquesimeto.

BRAZIL. More than 300 institutions offer "higher education" (after 12 or 13 years of schooling). Many are called "technical institutes." Institutions with industry-based programs promoting technological advancement are popular in urban areas. (See Martorana, 1981). A constitution adopted in 1988 restates the unity of tthe complex higher educational system based on the research university model. Thus, technical courses are offered within the fabric of the federal university system

CHILE. From 1960 to 1965, Chile had eight collegios universitarios regionales opened under the auspices of the Ford Foundation and the University of California. These were named "university centers" in 1965 and became regular campuses of the university in 1969 under university governance. The curriculum of the regional colleges was diversified, offering training in at least 20 paraprofessional careers (See Medsker, 1972).

The demise of the regional colleges resulted, in part, from the traditional university's refusal to enroll graduates of the short-cycle colleges. However, in January 1981, technical centers were formed to produce primary teachers (four-year courses) and technical programs culminating in the first tertiary degree (two- and three-year courses).

COLOMBIA. Similar to Chile, the institutes universarios system was under the UC project. Both public and private university institutes were assigned middle-level manpower courses to meet regional needs. Two types of institutions continue to offer less than university degree programs: (1) intermediate professional institutes (many of the 100 or more are private) offering practical training in secondary jobs (clerks, sales assistants, etc.), and (2) institutes of technology (a large number of the 100 are private) awarding technologist or specialist technologist diplomas in particular subjects stressing practical applications of basic theories.

GUYANA. Guyana, along with Belize, is not considered South American, but a part of the Caribbean Commonwealth. The nation is currently involved in a cooperative program that includes creating short-cycle institutions. This is a part of the University Development Linkage Program with the CCID led by Brevard College, South Florida.

PERU. The country has nine years of basic compulsory education. Units of a reform system called ESEP (uppersecondary) overlaps with existing higher education technical education and universities. The reform system actually beginning with the uppersecondary has higher schools of professional education, including marketable skills. Both university-bound and work-bound students take three-year courses. As in much of the world, there is no transfer. Students join, or are placed in, one track to stay. ESEP graduates merely qualify to take university entrance examinations.

AFRICA

For generations, virtually all of Africa was under colonial rule - France primarily along the Mediterreanean and northwest coast territories, and England and Belgium throughout the Sub-Sahara. As the territories achieved independent status, one by one, the new governments found themselves far behind in the rush of technology. Colonial universities remained elitist, providing postcompulsory education for only a fraction of the populations.

As colonial governments left soon after the close of World War II, the new nations scrambled in haste to prepare for a future already at hand. Nonuniversities were created especially to prepare primary teachers and technologists and technicians required to mount the new economies now beginnning to unfold. Some nonuniversities moved toward an American style of awarding the initial tertiary diplomas and first degrees, following a 12-year compulsory education requirement. Others favored, or remained attached to, the British ordinary and advanced certificate system centered in the Guilds of London.

Of the dozens of nonuniversity systems launched in haste, the Kenya Harambee Institutes of Technology have become the best known and most widely diversified. In the last half decade, South Africa has shown significant progress in increasing and upgrading nonuniversities synonymous with technical training. Distance learning has also expanded remarkably mostly through universities. Botswana, for example, is a leader with its Institute of Adult Education.

The following summaries of a sampling of African nations show diversified attempts to arrive at some balance between the traditional research university and skills training now so desperately needed over the vast continent.

ALGERIA. The country's school system is composed of six primary years plus a seventh primary year for failures, and three middle years. Middle schools are academic and technical. Graduates can move to secondary school or university after exams. Three- year secondary (lycees/baccalaureats as well as technical studies follow the three-year nonbaccalaureate second-level technician schools. These schools attract non-qualifiers for conventional secondary schools who can stay in programs that are not university prep. Certificates or diplomas granted by the Ministry allow work-study for three to five years. There are also junior colleges and specialized two-year institutes.

CHAD. Chad, one of the poorest of African nations extending into the great Sahara Desert, had several higher education nonuniversities as early as 1988. These concentrated on Animal Husbandry, Veterinary Studies, and Forest and Agriculture.

ETHIOPIA. Ethiopia also has junior colleges and specialized two-year institutions beyond uppersecondary. At least six junior colleges offer two- and three-year diploma courses. Outstanding students can be recommended for first degree programs. Formal education now ends with the twelfth year of schooling.

GHANA. Ghana has several short-cycle types: teacher training colleges for postmiddle and postprimary teachers, three-year postsecondary schools, advanced

technical colleges, and sixth-form schools for specialist and professional training. The government is perfecting a 6:3:3:4 compulsory education system. The senior secondary includes regional colleges of applied arts and sciences and primary teaching. These intermediate colleges have opened to heavy enrollments at both the lower academic and technical training levels.

IVORY COAST. In Ivory Coast, the National Higher Technical Institute coordinates technical and commercial education at the postsecondary level. There are several national specialist schools and an Institute of Tertiary Education.

KENYA (1962 and 1986-1987). Two projects completed in 1962 document early interest of the new Kenya Government in short-cycle higher education. One was a two-year scholarship program for sixth-form graduates that brought 30 students to two-year colleges to the state of New York and a similar number to Southern California. (See Kintzer & Goodman, 1963). The great majority enrolled in secretarial, accounting, and office management courses. Only a few elected technical courses. This matched the great need in pre-Uhuru Kenya for office procedures, rather than technology. The other was the visit of a survey team from the Center for the Study of Higher Education, University of California, Berkeley. The team recommendations included experimental two-year colleges with comprehensive programming primarily occupational preparation.

Postsecondary institutes were officially announced by the Government in the third development phase - 1974-1978. President Kenyatta spoke of "Harambee Institutes of Technology." (Note: "Harambee" was a work-gang cry liberally translated to mean "let's work together." "Self reliance" became a slogan particularly in rural areas). "Harambee" became the national motto following Jomo Kenyatta's dramatic pronouncement during his acceptance speech as Prime Minister of the new republic on June 1, 1963. Eight "Harambee Institutes of Technology" were registered by 1975, and five others were proposed. Sixteen were operating in 1986-87 during the author's six-month stay under a Fulbright senior research award. Beginning dates of each institute and major curriculums/courses will be identified in the next section. (See Kintzer, 1987).

<u>Institutions visited</u>

Kenyatta University
Moi University
University of Nairobi

Coast Institute of Technology - Voi, near Mombasa (1981).
Building cunstruction - very small, and along with Embu and Gusii, Coast is likely to remain minimally successful.
Embu Institute of Agriculture - "back country" above Embu town, north central (1984). Agriculture.
Gusii Institute of Science and Technology - Kisii, east (1976).
Building construction.

Kaimosi (Friends) College of Science and Technology, western province (1971). Secretarial and food technology (canning) - about 300 students.

Kiambu Institute of Technology - Kiambu (North Nairobi) (1973). Building contruction, electrical-television service, baking, and a furniture contruction unit that exports products to East African countries - strong attempt to incorporate general studies, full extra curricular activities program - 1000-acre coffee farm - over 400 students, and as a metropolitan Nairobi institution, has great potential for growth.

Kimathi Institute of Technology - Nyeri, central (1974) . Business studies and building construction - 900 acres of coffee, sutstantial single-story units - covered walkways - impressive president's home - one of the largest enrollments - 400-500.

Kirinyaga Technical Institute - Keruguya, central (1977). Admits primary leavers (EACE-level) building services and clothing crafts - one of the smallest districts, in area, but a comparatively large student body - over 400.

Meru College of Technology - north central (1983) . A new 630-acre site near Meru town bordering the Kuuru forest (Mt. Kenya) agriculture, automotive repair, business studies - a potential for a large enrollment.

Moi Institute of Technology - Rongo - highlands above Lake Victoria (1983). Moi Institute has been slow in constructing a campus on a large tract of 4000 acres - the school serves the Lake Basin in a rich agricultural region - a multi-story building has recently been occupied.

Murang'a College of Technology - central province (1975). Craft and technical training in water engineering, motor repair, home science and textiles two to three year duration attempting to serve "last chance" primary leavers in crafts - probably the most spacious campus in the system - over 500 students.

Ramogi Institute of Advanced Technology - overlooking Kisumu and Lake Victoria (1976) Building technology, transport management, and three two-year courses in engineering technology including TV servicing - one of the few institutes with multi-story buildings - second largest enrollment to Rift Valley.

Rift Valley Institute of Science and Technology - central province, Nakuru (1973). Commerce, textiles, agricultural and mechanical engineering, building, and water technology - under strong support from President Moi, Rift Valley became the most prominent Harambee Institute with a total of 7700 acres of excellent farm land and a hostel for some 1000 students and the faculty and staff - total enrollment is over 1100 - several multistory buildings have been constructed - the institute offers a comprehensive sports program.

Sang'alo Institute of Science and Technology - western province, Bungoma (1977). A 550-acre campus with a dairy farm and a variety of cash crops - two-year diploma course in agriculture and several less-than-certificate courses.

Ukamba Agricultural Institute - eastern province, Yatta (1985). Extensive campus of 10,000 acres on the Mivita Syano river, and the Emali campus of 4500 undeveloped acres south of Machakos - two-year certficates in general agriculture best known for dry land agriculture - a small opening student body, but strong potential for growth with financial and material help from Saskatchewan.

Western College of Arts and Applied Science - western province, Kakamega (1977). With financial and personnel help from Denmark, the college manufactures hand pumps through its water technology program and exports these and other products to Uganda, Tanzania and Zaire, WECO has one of the few computers in the institute system with help coming from Denmark- one of the large enrollments - 600.-800.

Summary

(1) A compulsory school completion certificate is generally but not exclusively the basic entrance requirement.
(2) Harambee institutes do not offer long-cycle (university) degree work.
(3) Harambee institutes concentrate on technical education from craft levels through semi-professional diplomas.
(4) Adult continuing or recurrent education and the responsibility for facilitating community educational activities are growing.
(5) Program relevancy is extremely important in all Harambee institutes.
(6) Practitioner nondegree professionals are often engaged as part-time teachers.
(7) Instruction- practical application - is emphasized.
(8) Student fees and other charges are minimal - approximately one-quarter of the annual cost per student. The Kenya government support is approximately 40% of the operational budgets.
(9) Harambee institutes have strong regional and local ties.
(10) Operational policy and day-to-day decisionmaking tend to be decentralized often with strong student and community involvement.

LIBERIA. Liberia's school system is 12 years duration. Ricks Institute is a church-related junior college with substantial tuition. Admission is reserved for the upper third of secondary graduates. The first year is large liberal arts with job appenticeship. The second year combines liberal arts and vocational training.

MOROCCO (1978). Morocco, like virtually all African nations, has specialized postsecondary institutes, two of which are national institutes located in Rabat and Fez. About 25 nonuniversities are attempting to meed the needs of the society by offering applied engineering training and other specific technologies.

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NIGERIA (1986). Education beyond the six compulsory years is not required. Nigeria has three types of postsecondary nonuniversity institutes: advanced teacher's colleges for lower secondary teaching, secondary grammar schools leading to university exams plus some diplomas, and polytechnics or colleges of technology that include advanced teacher training.

SIERRA LEONE. Sierra Leone's technical institute includes training for The City and Guilds of London Institute. Six teacher training colleges are also involved in that relationship. Students are eligible to enter after passing the general certificate of education ordinary and advanced examinations conducted by the West African Examinations Council.

SOUTH AFRICA. South Africa, including Botswana, Lesotho, Namibia, Swaziland, and Zimbabwe, moved during apartheid toward a community college-type system with technician-level emphasis. Different types were developed in the various South African states. The National Commission on Higher Education has recently recommended a consolidated university system governed and financed as one coordinated system composed of 30 to 40 universities and technical institutes. In this effort to improve university autonomy and to finance a uniform system throughout the vast nation, it is vital that the individual roles of the technical institutes directly associated with universities will be preserved.

In the technical institute group scattered over the South African states are about a dozen residential "technikons" which prepare technicians in various occupations. These postsecondary schools are seen as leaders in vocational training and technology. The technikons award diplomas and certificates after one- and two-year courses.

Two innovative approaches should be mentioned: (1) The National Postdiploma Certificate (one year) stresses the horizontal broadening of knowledge and skills aimed at a specific occupation. Entrants must have a First National Diploma of three-years after a school-leaving certificate. (2) The National Higher Diploma is also one year beginning after the First National Diploma, but pointed in this case at vertical development and depth of knowledge and skills in particular occupations. (See Clark & Neave, 1992, p. 638, in General Bibliography).

SUDAN. Typical of African nations struggling to gain a technological foothold, the Sudan government supports about a dozen institutes of technology and polytechnics to satisfy the demand for middle level technicians and more teachers for the expanding secondary school system. Advanced diplomas offered in the polytechnics for teacher training and higher level technicians are three- and four-year programs.

TANZANIA (1987). As far back as 1964, a national "community college" offered primary teacher training at Dar es Salaam. That uppersecondary work was transferable to the University of East Africa. A primary teacher's college operating at Arusha is referred to as a "national community college." The government supports three leading technical institutes under a three-tier system: (1) the university, (2) technical institutes, and (3) other postsecondary

schools offering specific technical courses. First and advanced diplomas are offered by the institutes and schools in such fields as water resources, land surveying, and town planning. Their location in the education hierarchy is similar to to the Republic of Kenya to the north.

ZIMBABWE. The Zimbabwe secondary education system extends postprimary study by six years,, and remains within the British model of ordinary and advanced levels. The nonuniversity system is composed of technical colleges, agricultural schools, and primary teacher's colleges. Characteristic of the British model, polytechnics provide advanced diplomas and a few degree programs.

ZAIRE. Admission to Zaire's institutes of technology (as many as 15) requires a secondary diploma. A similar set of institutes for elementary teacher training offer three-year courses. A community college-type institution has been discussed, but a very unstable government has not taken action.

Summary note: As indicated in the opening statement on Africa, emphasis on vocational education occurred first in new national governments released from European domination particularly where reasonably stable governments and economic growth were present. Previous experiences in beginning vocational skills training were also advantageous. For example, technical and craft schools were favored in East Africa during the 1950s. To be a skilled tradesman was highly prized throughout the area now including the republics of Kenya, Tanzania, and Zimbabwe.

Shortages in engineering craftsmen and technicians of all types were alarming. Help was urgently solicited from governments throughout Europe, the United States, and Canada. The Canadians, Danes, and Dutch were especially responsive with talent (educational specialists), equipment, and capital., as well as short-term faculty, student exchanges, and fellowships for African educators. Churches established and supported subuniversity or nonuniversity colleges and institutes. For example, Ricks College in Liberia was one of the early junior college-type institutions in West Africa; Kaimosi College of Science and Technology, now a part of the Kenya system of Harambee Institutes of Science and Technology, began in the early 1970s as Kaimosi Friends College.

Particularly in the early stages of development, technical training as an entity of government often lacked administrative cohesiveness. In many African nations, schools assigned less-than-university level education were dispersed politically among a variety of governmental divisions. University leaders, in general, were reluctant to support and participate in the new training programs because they lacked academic rigor, and accepted university rejects. In some nations, universities entered applied fields through extension campuses or separate oncampus faculties.

The extreme shortage of primary teachers and skilled workers of every description were, and continue to be, prime reasons for activating such programs either in uppersecondary schools and existing public and private colleges. As the century closes, The Republic of Kenya is the only African nation having a separate system of technical institutes as a reasonably cohesive unit under the Ministry of Education.

MIDDLE EAST

EGYPT (1992). Nonuniversities begin to emerge in Egypt in the late 1950s. Institutes, known as training center were first established in the mid-1970s. By the end of the next decade, technical institutes wereoperating. The number has since increased to about 35. These accept students hold general and technical secondary education certificates. Courses in particular specialties are two years in duration . Employment is the objective. Some are private, and all are affiliated and governed by the Ministry of Higher Education. (See Clark & Neave, 1992, in General Bibliography).

Institutions visited

American University (Cairo).

ISRAEL (1982). The Israeli nonuniversity movement dates from 1966 when the Minister of Education announced a plan to establish regional colleges. The first attempts were operated by kibbutzim, and by 1974, there were four regional colleges each affiliated with a unviersity. These rapidly became university extension centers. Academic programs decreased and the system became a third-tier institution in national programming, limited almost entirely to technical training. There are (in the 1990s) at least eight such regional colleges. Israeli compulsory school consists of a six-year elementary school and a six-year junior/senior high comprehensive system. In the West Bank, technical institute graduates take Jordanian exams to receive diplomas in agriculture, art, higher education, and other technical fields. Everyman's University in Tel Aviv is a type of open university heavily involved in adult education. Several American community colleges have offices or small centers in Tel Aviv and Jeruselem. (See Kintzer, 1982).

Institutions visited

Ben Gurion University
Pinchas Sapir College
Ramat Hanegev College
The Practical Engineering College of Beer-Sheva
The Hadassah Community College.

IRAN AND IRAQ. Both of these nations, as suggested earlier, have in past decades been heavily involved in nonuniversity education. Many technical institutes, perhaps as many as 50 in Iran and 20 in Iraq, were operating in the mid-1980s. (See Fatemi & Burroughs, 1969, in Selected Bibliography).

JORDAN. Most nonuniversity systems in nations of the Arab world - some twenty nations - are organized in specialized curricular patterns. Jordon's nonuniversities, however, are most like American community colleges with comprehensive programs and transfer arrangements in place. The system of some 30 and over 20 private colleges answer to the national Ministry of Higher Education.

The Council of Higher Education includes both public and private college representatives. (Al-Tal, Ashour & Katsinas, 1993).

Jordan created nonuniversities early in the international development of short-cycle education. In 1965 there was a network of junior colleges including engineering institutes, other technical institutes, and teacher's colleges offering two-year programs. All were free boarding schools, but very small. In addition to the community colleges, a number still operate as teacher training institutions. (Gilliam, 1969).

LEBANON (1982). During the 1980s, 12 institutes of higher education were open in Lebanon, in addition to universities. Three institutes were government sponsored, others were French or U.S. orientation. Little communication exists between the SCIs and the universities.

SAUDI ARABIA. Junior colleges in the 1980s were single sex. Later in the decade, two-year technical institutes were developed with contractual help from the United States Some 60 technical institutes (both male and female students) are state managed. Courses are from one to three years. Teacher training is offered in junior colleges. A shortage of technical-vocational programs still exist, particularly in rural areas. Several imposing campuses and large programs flourish in the larger cities.

TURKEY (1969). Uppersecondary in Turkey is the 9th through the 11th grade. Upper secondary schools have many forms of specialized manpower courses, as well as university prep. Called technical institutes, these schools award A.A. degrees after two year completions. Short-cycle adult education academies between upper- secondary and university levels are somewhat like community colleges

In recent years, an unique flexibility has developed: pre-baccalaureate diplomas are awarded to students who initially enroll in four-year courses but do not pursue the entire course. Diplomas are awarded after two years of the full program are completed with a "C" average. (Clark & Neave, 1992, p. 747).

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EASTERN EUROPE (INCLUDING RUSSIA AND FORMER SOVIET UNION NATIONS)

The extension of the nonuniversity concept is under heavy debate in central and eastern Europe. With the unification of Germany and the collapse of the Soviet empire, major reforms are appearing first as national policy statements. Separating teaching from research or uniting the two in better balance is one of the crucial issues under debate. Under communism, the quality of teaching had deteriorated much faster than the quality of research. Universities and the academies of science did not supply the manpower to maintain competitive economies. Faculties were not interested in renewing obsolete curriculums. Communication networks and transnational partnerships between universities and industry are now in place. Programs identified by the acronyms COMETT, ERASMUS, LINGUA, and TEMPUS are designed to speed the modernization of higher education. (See Cerych, 1993, in Selected Bibliography). Of these programs, initiated by the European Economic Community (EEC), COMETT - Community in Education and Training for Technology - and ERASMUS - European Community Action Scheme for Mobility of University Students that is designed to become the European Community course credit transfer system - are the most important for the future unity of member nations.

BELARUS. In Belarus, south of Lithuania, a network of postdiploma courses involving commercial cooperatives, mostly small enterprises (around 100 of them) emphasize specialist upgrading. These last from one to six months, or more than one year. The classes are taught by leading research specialists, scholars, and managers. The Ministry of Education has introduced over 200 such establishments for training and retraining workers.

BULGARIA (1977). Bulgaria, a very poor country along the Black Sea south of Ukraine, is developing three-year postsecondary schools to be followed by two- and three-year universities. These called "semi" or "incomplete" higher education, consist of courses linked to production in the private sector, and civil engineering in the public sector. Junior specialist certificates are also granted, giving permission to take university admission examinations. Over 40 such semihigher education institutions are now operated by the government. (See Selected Bibliography).

CZECH AND SLOVAK FEDERAL REPUBLICS. Alternative sectors of higher education - nonuniversity systems - are being developed in both the Czech and Slovak federal republics. Universities and other institutions in both countries are neither able or apparently willing to offer programs with different objectives, content and form.

In the Czech republic, selected secondary technical schools that already had provided postsecondary further education are now offering courses with high employment demands, e.g., applied economics and law, automation technologies, tourism, and many other service fields. These studies called "multidisciplinary" avoid the narrow focus of one professional area that characterizes Japan's junior colleges. The project controlled by the Centre for Higher Education Studies in Prague with financial support from the Dutch government, is modeled on the Dutch higher vocational education

system. In Slovakia, a similar project is underway. The Slovak version is based on the German fachhochschulen and British polytechnic systems. Both should attract students who would not, or could not, enroll in universities (Harach, Koucky, & Hendrichova, 1992, in Selected Bibliography).

HUNGARY (1977). Among the nations no longer Soviet-dominated, Hungary is moving rapidly to replace the alien monolithic higher education system that for generations plagued Eastern Europe. The national plan introduces a university subgrouping referred to as the universitases, the integration of several universities with integrated specialties placed in a regional setting. The universitases may be offering associate degrees (one or two years), and baccaleurates (three to five years). Postsecondary specialized schools offering certificates of training are to be added to the existing college system. These will be restricted to the granting of associate degrees and shorter courses for direct employment. In the planning stages, the college system resembles a nonuniversity sector.

KAZAKHSTAN. Kazakhstan has a number of new institutions for upgrading technical skills, including teaching. A dozen or more are called "technical institutes," and over 20 are "training institutes." About the same number specialize in upgrading teaching skills.

POLAND. Poland's four and five-year technical schools, created under the Higher Education Act of 1989, are somewhat like technical institutions in the United States, specializing in higher pedagogical and professional training and continuing applied research. Distinctions between these colleges and the traditional research-minded universities is not clear.

RUMANIA (1977). Rumania's system of several technical institutes deal with building trades, mining, petrol/gas, and under-engineering training.

RUSSIA (visited Leningrad only, 1973). With the beginning of "perestroika" (restructuring) in 1986, higher education was rapidly reorganized to strengthen links with the approaching private industry. Practitioner education was prioritized. However, only sketchy information is as yet forthcoming from the various new republics replacing the former Soviet Union.

The following details on the education system in the Republic are reliable: (1) Mandatory schooling ends with the 9th grade. Many completers then go to work. Those choosing to continue in the academic track enroll in academic courses for two years, often in the same "mandatory" school building. The next move is to a unviersity for five or more years, or to another "higher" school, e.g., a teacher's institute for a five-year course - five years beyond the 11th grade. A teacher's institute training course is the same length as a university first degree, but is "higher" than an auto-transport college, for example, which is similar in status and purpose to Japan's short-cycle technical colleges that concentrate on a single technology or trade. (2) Those choosing a technical path after the ninth grade go to a technicum or technical college for three years. While these are primarily skill-oriented institutions, the academic work offered is apparently equal to that provided by academic track schools. (3) The three types of institutions: (a) universities, (b) teacher training colleges

and other "higher" schools, and (c) technicums or technical colleges, appear to be roughly equivalent to the three-tier paradigm characteristic of systems in the United States. However, types (a) and (b) are not as clearly designed as research universities and state universities in the United States (Hussey, 1995, in Selected Bibliography).

UKRAINE. Junior specialist courses are now a part of multi-stage reforms. A government-controlled accreditation and evaluation system is also being introduced. There are about 15 junior specialist institutions, two to four years.

YUGOSLAVIA - the former republics - (1977). "The 1968 Act" recommended the creation of a system of "higher" or first-cycle colleges - Vise Skole or Visje Sole. Specialists primarily in the semiprofessions would be produced rapidly to reduce the gap between the secondary school and university products, between the semiskilled and skilled worker and the theory and design specialist. The earlier two-year colleges in Yugoslavia dating from the 1930s were not designed to meet the demands of the new technologies. Referred to as "academija," these schools, small and insecure like the American junior colleges, were primarily for elementary teacher training to rebuild the school system that had been virtually destroyed during World War II.

By the mid-1970s, there were approximately 300 vise skole scattered over the country. Little general studies programs were offered. Most had narrow concentrations, preparing skilled technicians at various worker classifications, beyond or above secondary school accomplishment, e.g., shoe-leather production, maritime, and social work. Others by definition included a diversity of majors, e,g., colleges of engineering and the arts. These were usually larger with more imposing equipment and campus areas.

Two types of visa skola entrance requirements continue: Those who have passed the final examinations at a secondary school or at an intermediate professional school, and those who have four years of successful employment in practical work in trade and industry and can pass entrance examinations. The second admission pattern is not common among short-cycle systems elsewhere in the world.

Special mention should be made of several visje sole. The first was in Maribor, Slovenia, an independent college that combined engineering and technology, offering majors in mechanical, electrical, and civil engineering, chemistry, and textiles. Another at Novi Sad in the autonomous province of Vojvodina, Serbia, offered four majors: bookkeeping, commerce, tourism, and export management. The Visa Ekonomska Skola in Beograd had six curriculums, all in business technologies. (See Kintzer, 1978a, in Selected Bibliography).

The Maribor duo engineering curriculums in Slovenia, still in existence, are excellent examples of the integration of short- and long-cycle programming, denying the traditional separation of university and short-cycle colleges. The duo arrangement combines the first level (four semesters) and the second level (four semesters) in one administrative organization. First level students at the vise skole must decide between employment (a fifth semester of practical work) or continuing for a diploma (baccalaureate) in the

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university. If the latter is chosen, then exams must be passed. for university continuance. At prescribed points, students can cross over from technical to academic tracks - a kind of "in-house" transfer. (See Kintzer, 1978b, in Selected Bibliography).

Institutions visited

Interuniversity Centre (Dubrovnik)
University of Belgrade
University of Ljubljana
University of Mostar
University of Nis
University of Titograd
Workers University (Sarajevo)
University of Zagreb
Economska Skola (Split)
Social work Skola (Ljubljana
Pedagogiska Skola (Ljubljana)
Mechanical Engineering Skola (Maribor)
Statistics Skola (Zagreb)
Leather Technology Skola (Zagreb)
Novi Sad Skola (Novi Sad, Serbia)
Economska Skola (Belgrade)
Pedagogska Skola (Pristina, Serbia)
Arts Skola (Pristina, Serbia)
Pedagogics Skola (Skopje, Macedonia)
Turistska Skola (Lake Ohrid, Macedonia)
Economska Skola (Titograd, Montenegro)
Pedagogic Skola (Mostar, Bosnia-Herzegovina)
Visoka Skola (Sarajevo, Bosnia-Herzegovina).

The absorbtion of two-year colleges by university faculties is a continuing process. The vise pedogogic skole were the first to be affiliated, since it was generally realized that two secondary years were simply not enough to develop qualified elementary teachers - the role originally assigned vise skole. Counseling-career advising at all levels in Yugoslavian short-cycle higher education was, and continues to be, critically lacking. That is the case in virtually all countries where short-cycle schools exist. Other student services and programs are also weak, if not entirely absent, in many countries operating short-cycle institutions. A few exceptions are reported in the national profiles.

CENTRAL EUROPE AND SCANDINAVIA

Except in the United States and several Canadian provinces, most nations supporting non university systems favor a specialized style perhaps best described as technical institutes. Such is the case throughout Europe and Scandinavia - the French IUTs, German Fachhochschulen, Yugoslav Uise Skole, the Dutch Higher Vocational Institutes, and the Norwegian RegionalColleges. All of these are more closely related to Great Britain's binary system of higher education than to community colleges and the United States. (For a detailed analysis, see Clark & Neave, 1992, pp. 1217-1224).

Universities as well as nonuniversities in western European countries are legally bound to admit graduates from academic type secondary schools, but as Clark and Neave point out, access to the nonuniversities is often more difficult than to universities. As in much of the world, there is little transfer of credits, but under the European community (EC) programs such as COMMET and ERASMUS (mentioned elsewhere in this essay), at least partial credit is beginning to be exchanged among western European countries. (Ibid., pp. 1222).

CENTRAL EUROPE

AUSTRIA (1976 and 1977). Austria's secondary system has two-tracks: a four-year hauptschule (vocational-technical) and a four-year academic (gymnasium) sector. Nonuniversities consist of pedagogical, social work, medical technology academies. Tertiary level polytechnics (less than universities) and other short-cycle types are not strong primarily because of a highly developed uppersecondary system that does not sharply divide lower- and uppersecondary studies. Adult education is offered mainly in adult education centers and public libraries. Austria has recently joined the European Communities organization. As mentioned in several other composites, a non-university short-cycle sector similar to the German-developed fachhochschulen may be on the horizon as the multi-nation organization begins to translate policies into colleges and institutes.

BELGIUM (1978). Belgium has a complex nonuniversity system that follows a 6-year primary schedule and a six-year sccondary schedule. Nonuniversity education starting at that point has both short and long courses in a wide variety of fields,technical and otherwise. Short courses, for example, in paramedicine, social work, and other technical fields are two- or three-years in length. Long courses in teacher education are four- or five-years. All long courses at the university level have applied emphasis. Bridges are developing to universities, from both nonuniversity short and long courses. For admission to a so-called "higher nonuniversity," a DGAHE - "Diploma Giving Access to Higher Education" - is required from a secondary school. Within nonuniversities, shifting from short to long courses is difficult.

FRANCE (1962, 1969, 1976, 1978, 1984). The French IUTs - "University Institutes of Technology" - were established in the 1920s as institutes within universities to provide three-year science courses for teacher preparation. By a 1968 decree, the IUT faculties were separated from universities, and the system was redesigned to specifically provide university training in the secondary and

tertiary sectors of higher education for higher technicians. The courses taught by separate faculties were terminal and two-years in length, breaking the traditional configuration of French higher education. Admission became more selective than the university academic programs primarily because the IUTs were smaller and fewer in number.

In time, the IUT faculties began to feel isolated from their university colleagues and less recognized because of their short-cycle assignments, despite the fact that the institutes were officially a part of the university system, but under a separate legal status. The IUTs gradually became more like the traditional-bound universities, and beginning in the 1980s, a separate unit called "Higher Technicians Sections" (over 600 of them) was strengthened and expanded to provide short-cycle education notably in science. These were outgrowths of secondary school education, the Lycees, and are programmed through the first postbaccaleaureate of skills training. In contrast to the IUTs, these Higher Education Sections are flourishing, despite the original intention of the government to eliminate them in favor of the Institutes of Technology. There is little articulation between these two short-cycle institutions - the Higher Technicians Sections and the University Institutes of Technology.

Most of France's 78 universities recently agreed to introduce new two-year courses to provide still more job-oriented work for those who are unlikely to complete full university degrees. The courses will lead to a diploma of university-level scientific and technical studies - further evidence of the comprehensive overhaul of the nation's higher education system.

GERMANY (1969, 1973, 1976, 1984). At the present time, a major question under discussion throughout Europe is: Should the German fachhochschulen - the postsecondary technical institutions so abundant in the former West Germany - become a pattern for other countries in Central and Eastern Europe? Fachhochschulen are now established in the new lander (states) of unified Germany. By 1992, over 7,000 students were enrolled in some 21 fachhochschulen in the former German Democractic Republic. (Barrows, 1993, in Selected Bibliography). Mutual recognition and eqivalence of diplomas, certificates, and qualifications are required in the 1998 Unification Treaty that has far reaching implications for unified Germany, as well as for much of the European continent.

Typical of German culture, enthusiasm for higher education change was not high. Prospects were not strong until unification became a political reality. The unification of the two German states is requiring new regulations to assure freedom of movement, and to assure students that diplomas and certificates earned in short-cycle institutions are equivalent in all lander.

A summary description of the fachhochschulen movement should be appended here. Beginning in 1968, many fachhochschulen (over 158) were rapidly established in all Lander of the Federal Republic to provide vocational and semiprofessional training to students completing 12-years of schooling along with practical work. Graduates were entitled to transfer to universities. Only a small number did so - not more than 10%. Originally, the fachhochschulen offered many-faceted courses in the liberal arts, but moved

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toward occupational education, emphasizing small study groups, practical exercises in a great variety of vocational fields. They were financed primarily by the lander. In the 1980s, the FHS had about 20% of all students in higher education.

Gesamthochschulen (technical universities) were also established in the early 1970s to integrate nonuniversities with traditional universities. Other institutions called verwaltungs fachhochschulen were also created to provide shorter training than the fachhochschulen. Another type of institution called volkhochschulen (people's higher schools) specializing in community services and noncredit courses was more like an adult high school. These were also popular in Austria throughout the 1980s.

In 1976, the Science Council of West Germany proposed short-cycle courses for universities, but this was strongly opposed by the faculties. The result was the continuance of the duo structure indicated above: theoretical curriculum at gesahhochschulen and occupational courses at fachhochschulen.

GREECE (1962, 1969). Compulsory primary school has been increased from six to eight years., and secondary school reduced from six to four years. Institutions resembling junior colleges have existed since the early 1930s. Several centers now have two- to three-year technical programs with free tuition. Other higher vocational/technical schools beyond the gymnasia have a variety of specialties from two- to six-year programs. In additon, pedagogical academies offer teacher training. Thus, tertiary education is divided into three institutional groups: teacher training colleges, technical colleges, and other vocational schools, including some private institutions.

ITALY (1962, 1969, 1984). Technical education traditionally began and ended with the uppersecondary, ninth through the thirteenth year, preceded by four primarily and six middle school years. Uppersecondary reforms have recently been introduced, including many special schools that require a minimum of 12 years of schooling for admission. Diversification of training cycles and expansion of university degrees are currently under intense discussion, especially community college education. (See Selected Bibliography).

NETHERLANDS (1976, 1984). Higher education was thoroughly reorganized in the 1980s. Goals for vocational institutes were specified in 1986 reform legislation included theoretical and practical training in the professions. A system of higher vocational colleges now numbering about 90 institutions can be classified as nonuniversities. These compete with universities for top secondary school graduates (Clark & Neave, 1992, p. 1043). The nation's higher education system is also composed of so-called "accredited colleges," and like many other nations, an open university.

PORTUGAL (1978). "Integrated High School" is a new type of nonuniversity, combining scientific technical, and practical education These have two- and three-year courses. The nonuniversity sector also includes polytechnics which sponsor teacher training, management schools, and many other types. Portugal, according to 1986 reforms, has a binary system: universities and polytechnics along with the integrated high schools which offer some

postsecondary courses. Those called "polytechnics" award baccalaureates and diplomas of three year duration. These are about twenty of these institutions. (Ibid., p. 581).

SPAIN (1978). Higher technical schools award diplomas in management or primary school teaching after three-years. Some technical training is still offered in both public and private universities. Of the several institutional categories, the Colegios Universitarios (university colleges, a style also popular in Latin and South America), offers only first level baccalaureate studies. Each center is under a specific university. Currently, there are about 48 university colleges. The Colegios Universitarios are similar to the university-affiliated examples in the United States, France, and Great Britain. This nonunivesity organizationl pattern is apparently growing in popularity in Spain.

SWITZERLAND (1976, 1984). Switzerland's nonuniverstiy sector of higher technology schools (ETS) is not preparation for university entrance. Students are given scientific, technical, and practical knowledge along with construction and laboratory work. Considerable attention is also given to general education work methods and character building. Diplomas are granted after three-four years of study. Graduates can be admitted to a Federal Institute of Technology, however, most seek work in appropriate occupations. ETS full-time admission is based on holding a federal certificate of professional ability through completion of apprenticeship and evidence of passing grades on a competitive exam in math, native language, and technical design. Admission to evening ETS institutions is more involved. For example, proof of a job in the major field is required. Training in a wide band of technologies is offered in the ETS system. Courses are three years. Numerous jobs are available to graduates from building of machinery to production manager. While university transfer is not usual, credits are transferred to faculties in universities and institutes of technology. While competition for students is heavy from second schools in the gymnasia, university popularity continues. Courses of study for technicians, day and night, the ETS (hautes ecoles) are holding their own. (Garke, 1984, in Selected Bibliography).

SCANDINAVIA

DENMARK (1969, 1973). Students enter technical trade schools after 10 years of compulsory schooling. These institutions, folk high schools, are a part of the uppersecondary. The Ministry has for some time experimented with "working group" techniques attempting to integrate occupational with higher education. A substantial change in government policy was made in about 1992 suggestive of changes in Britain: all students completing uppersecondary school (age 18-19), must complete three self-directed projects related to world problems. The purpose of requiring the series of essays is to insist that students interrelate many of the courses taken during uppersecondary years.

FINLAND (1973). Technical institutes, following compulsory schooling, are classified as uppersecondary education. Short- and long-term courses after the upper-secondary are given in about 20 universities.

NORWAY (1973). Educational change in Norway began late in the 1950s with a series of reforms at the primary and seciondary levels that included a nine-year elementary school and a comprehensive high school system. Documentation prepared by the Norwegian Parliament (Storting) presented the reasons why district or regional colleges were necessary, i.e., higher postsecondary enrollment predictions, inadequacy of the present vocational schools, need to democratize, decentralize, and deurbanize postsecondary opportunities, unsatisfactory articulation, and the paucity of opportunities for adults. The egalitarian nature of the Norwegian society was another contributing factor to the immedidate, and likely, the continuing broad support for the regional college nonuniversity system.

The country was divided into 12 districts. Four were to be university expansion regions, and a regional college was recommended for each district. Three were opened as semiautonomous colleges in 1969 and three more in 1971, the original legislation created as a five-year experiment. The movement now consists of some 11 district colleges in 17 national regions.

The colleges were not created as superhigh schools or subuniversities, but were designed to compete favorably with the University of Oslo in terms of faculty salaries and working conditions. Regular college faculty must have credentials equal to university colleagues. Strong support was given to the experimental colleges by the president of the university. Generous transfer credit allowance was announced by the university, and transfer formulae were steadily created.

Although tuition was free, entering students had to pass matriculation exams or show theoretical or practical experiences. A three-year theoretical background after compulsory secondary education was necesary for first-cycle or university transfer. As the following summaries of six of the regional colleges suggest, innovation and experimentation were watchwords. Students to a large extent worked independently in small groups in all courses., occupational or otherwise. (Kintzer, 1974 and 1975).

Institutes visited

University of Oslo

Adger District Regional College (Kristiansand) strong efforts to involve students in administrative decisionmaking - in the early years, 50% of the college senate were students.

Hedmort/Oppland District Regional College (Lillehammer) introduced integrated curriculums and innovative instructional styles - the opening educational philosophy was anti-technical, informal seminars were organized around societal problems, students worked in teams with instructor participation, pass-fail grading prevailed - resembled, pedagogically, the folkekogskole (folk high school or people's movement) popular in Scandinavian countries.

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More/Romsdal District Regional College (Volde-Molde) mass media communication and coastal transportation terminal curriculums were emphasized in this northern college.

Nordland District Regional College (Bodo District Regional College at Tromso, the world's northernmost two-year college) fishing economics was the first course to be offered in conjunction with Tromso University.

Rogaland District Regional College (Stavanger) heavy emphasis on team teaching - several unusual programs were developed in the social sciences - courses in community youth leadership, personnel administration in municipalities and for leaders in the cinema. A three-year course in oil technology was offered to support the developing North Sea oil industry.

Telemark District Regional College (Bo) ecology was, the most popular curriculum, remembering the "heavy water" experiments during the Nazi occupation - there was greater student interest at Bo in university preparation.

Several additional notes on the Norwegian short-cycle movement indicates similarities with other nonuniversity systems discussed in this essay: (1) Enrollments varied considerably from about 50 in the far northern districts and most rural areas to over 500 in the more urban sections of the south. (2) campuses were slow to develop in the capital city and other heavily populated areas, and (3) innovation and experimentation were commonly endorsed. Several developing situations also represent issues emerging to perplex leaders throughout the world: (1) Pressure is mounting for nonuniversites to become more like universities - more theoretical, less functional, less flexible, resulting in longer courses and higher degrees, encouraging duplication and competition. (2) Need for remediation as a major function of of short-cycle education is in direct conflict with the above issue (3) Less and less interest is given, in the crush of the above priorities, to adult and continuing education - community education.

SWEDEN (1973). Democratization of the education system from top to bottom also evolved in Sweden after World War II. This egalitarian transformation, especially in postcompulsory education, surged ahead following recomendation of the controversial 1968 Education Commission, referred to as U68. Changes recommended by the Commission were aimed at making higher education available to larger segments of the Swedish population and lessening the disparity in value between university degrees and nonuniversity certificates and diplomas. The final report in 1973 directed attention to adult and recurrent educational opportunities in postcompulsory institutions.

To approach these goals, the entire range of technical training was reorganized within five occupational clusters, and existing institutions were dramatically reduced from 71 to 19 comprehensive regional universities. Throughout the regional system, education was to be more occupationally oriented. The consolidated universities were also encouraged to strengthen adult and continuing education. Key phrases used to summarize the system included "broadening recruitment," "linkages with work," "decentralization of

decisionmaking power," and "participation by diverse interest groups." Two other tendencies marked the change in governance and management: (1) the policy to transform a highly centralized system to a more decentralized one, and (2) the inclusion of external representatives on the decisionmaking bodies of institutions.

Unlike Norway and many other national efforts discussed, the massive reforms in Swedish postcompulsory education did not include a separate nonuniversity system. The reforms involved the uppersecondary and university levels exclusively. In 1971, vocational schools were amalgamated with gymnasia, pre-universities, to form a new uppersecondary system - an integrated form to follow a compulsory nine-year comprehensive system. The new Swedish uppersecondary schools, while considered secondary, were not compulsory. However, the schools were planned for 100% of the appropriate cohort, and compulsory school leavers were encouraged to continue. Unlike other Scandinavian countries, Sweden did not require a single final examination to complete the uppersecondary. Two types of study were recommended: three-year programs with theoretical orientation, and two-year programs primarily vocational. Admission was based on school leaving certificates earned at the end of the nine years. Work experiences added points to the admission process. One-third of the places in uppersecondary education were to be saved for direct transfer to universities. Choices of classes and admission regulations of the receiving institutions were important transfer considerations. Potential for change in Swedish higher education, therefore, was directly related to the uppersecondary system. Some studies, nursing for example, have grown in popularity to the point where entrance into uppersecondary required higher compulsory school leaving marks.

Structural changes in Sweden illustrates two patterns of postsecondary reform: restructuring secondary education, and diversifying existing higher education units, but not creating a separate and distinct nonuniversity unit. However, many schools that are postcompulsory and post-uppersecondary exist, and the demarcation line betweem them and universities is also inexact. Such institutions specialize in nursing, creative teaching, navigation, and others. To complicate the situation, several colleges of education offer both university and nonuniversity education.

Summarizing a very complex system of higher education, Sweden, since 1977, has had a state system of higher education composed of multiple units under the Ministry of Education, and separate units under the Ministry of Agriculture. All higher education encompasses institutions under the authority of county and local government, as well as many other state institutions. All higher education was placed under state authority in the 1980s, but with strong decentralized policy and decisionmaking responsibility.

Two organizational styles emerged in the restructuring pattern: (1) compulsory education was expanded by adding to the high school, just as happened in the United States 70 years earlier, but avoiding a separate educational unit, and (2) short-cycle higher education was developed through comprehensive regional universities. The second came first as U68 policies were implemented.

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GREAT BRITAIN

ENGLAND (1962, 1969, 1980, 1988 - inc. Wales , 1988). The British Colleges of Further Education, under various titles, i.e., college of technology, technical college, and recently, community college are comparable in purpose, organization, and offerings to the American community college. These nonuniversities are not teacher's colleges, which in Britain, are referred to as colleges of education. The latter are combined with polytechnics or other further education colleges in many areas to enable some of the CFEs to undertake teacher education.

The CFEs grew out of the late 19th century technical institutes or night schools which served working men mostly in urban areas Following World War II, the CFEs gradually encompassed a diversity of courses and curriculums to satisfy constituencies throughout England and Wales. The first community colleges, appearing by title in the early 1970s, were combinations of secondary school and adult education. The sixth-form college, another postwar type, offered postsecondary students from age 16 through 19 academic studies in preparation for polytechnics and universities.

Further education, as described by Graystone (1995), is the name associated with postcompulsory or postsixteen education in all four nations of the United Kingdom, especially England and Wales. The 558 colleges vary enormously in size from a few hundred to large "general further education colleges" up to 20,000 full- and part-time students. Not designed as degree-awarding institutions, the CFEs continue with strong technical and occupational programming. Most of them, particularly the smaller institutions, specialize. The CFEs remain free for full-time students from ages 16 to 18.

Until the mid-1980s, educational institutions other than private schools and universities were governed, by elected local authorities that included the CFEs, higher education, and adult and continuing education. (Graystone, 1995). The dramatic changes now unfolding were brought to a point of action through Britain's membership in the European Union. Educators convinced politicians that the existing system was not directly related to the surging technologies affecting business and industry. Too few of the 16-year old generation were enrolled in the CFE system that remained under the control of local educational agencies with only oblique attachments to the federal government.

The Education Reform Act of 1988 that followed removed the CFEs and sixth-form colleges from locally elected authorities, and established independent corporations. These governing bodies are somewhat similar to the American independent college district governance system. Quality assessment provisions to be developed by local councils have also been instituted, indicating an additional easing of government control. The 1988 Act also gave the independent corporations power over budgets and staffing along with the continuing local authority organizations which continued to fund the CFEs and employ faculties.

Additional changes were exacted in 1992 when the Further and Higher Education Act removed the CFES and sixth-form colleges from local authority control and given entirely to the free-standing corporations. Like American community college governing boards, the new British independent corporations legally own the property on which the colleges are located as well as the buildings. Similarly, the CFE executives, called "principals," are elected by the corporate boards. But unlike American counterparts in most states, corporate governors appoint their own members, and at least half, according to the 1992 Act, must represent business, industry, and the professions. Principals have the option of serving as full members of the corporate boards.

The John Major government is closely involved in promoting post-compulsory education. Further education colleges are definitely on the priority list for sweeping reform. The accent is on greater administrative efficiency, and greater attention to aims, objectives, and achievement, suggesting that the Colleges of Further Education which do not measure up will be discarded.

The new system faces many problems, e.g., relationships between board members and principals, allowable similarities and differences among CFEs. Nevertheless, college leaders and enthusiasts in the government welcome the chance to belong to a quasi-independent system enjoying high national visability and political power.

Teams of American educators through AACC leaadership have recently engaged in discusssions with members of the Association of Colleges, the American equivalent in England, Scotland, and Wales, and are forming international collaborations to include American colleges.

IRELAND (1969, 1988). The decision to create nine third-level institutions in Ireland was made in 1966 by the Department of Education. The institutions named Regional Technical Colleges were to concentrate on occupational training. Five RTCs were opened in 1970 at Athlone, Carlow, Dundalk, Sligo, and Waterford, one at Letterkenny in 1971, Galway in 1972, and Tralee in 1977. While priorities have changed, the institutions, in Irish terminology, still offer senior-cycle postprimary courses in a variety of technical subjects. The two-year full- and part-time curriculums result in leaving certificates similar to compulsory secondary school awards at the learning certificate level, and prepare students to continue the programs at the nonuniversity colleges. This emphasis helps to increase the meagre supply of lower-level technicians - those who would not seek advanced training. The classes taught in the regional colleges, have been received with great enthusiasm, and women have been encouraged to enroll. The third year of advanced senior-cycle, likened to the first year of postsecondary education, is geared to leaving certificate holders, and the work completed is being articulated with professional schools and universities. The two-year leaving certificate programs have now been eliminated. The few continued are under adult education auspices.

Transfer relationships are being developed to remove both lateral and vertical barriers. Students are able to move from a craft apprenticeship

course to a first stage technician education certificate program. The University and, to a greater extent, the National Institutes of Higher Education at Limerick and Dublin are the transfer receivers. Joint baccalaureates where cooperation between a regional college and a university is maximized are being developed. Such is the case in Manufacturing Technology between Galway Regional Technical College and the University College, Galway. The policy being implemented provides one year of advanced university standing for two years of RTC study.

Community ties have progressed most noticeably in cooperative apprenticeship programs and sandwich arrangements with industry. Diplomas in Mining Geology at Athlone, in Nautical Studies at Cork, and Agriculture at Waterford are examples run jointly with local industry.

As found in many short-cycle countries, regional colleges in Greater Dublin where the population is most dense is the last area to have regional technical colleges. Several in metropolitan Dublin are likely to be opened.

A special reference is made to Ulster Polytechnic in Belfast, Northern Ireland where degree and nondegree level programs in advanced technologies continue despite the constant political upheaval and reoccurring bloodshed. The polytechnic was started in 1971 at the Belfast Technical College which offered lower-level technical training. The current campus is very imposing with first grade equipment and material. (See Selected Bibliography).

Institutions visited

Trinity College (Dublin)
Ulster Polytechnic (Belfast)
University College (Dublin)
National Institute for Higher Education (Dublin)
National Institute for Higher Education (Limerick)
College of Technology, Bolton Street (Dublin)
National College of Art & Design (Dublin)

Athlone Regional Technical College
Carlow Regional Technical College
Cork Regional Technical College
Dundalk Regional Technical College
Galway Regional Technical College
Letterkenny Regional Technical College
Limerick Regional Technical College
Sligo Regional Technical College
Tralee Regional Technical College
Waterford Regional Technical College

SCOTLAND (1980, 1988). Three types of institutions belong to the short-cycle family in Scotland. The central institutions funded directly by the Scottish Education Department, providing full-time courses leading to diplomas, are all

vocationally oriented. A much larger number of education authority colleges offer a comprehensive list of full- and part-time sandwich courses with day or block release scheduling, and culminating in specific certificates and diplomas. These are honored by government and industry for employment throughout Great Britain. Unlike the English direct grant institutions, the Scottish education authority colleges are sponsored and financed by local groups, and like their English counterparts are classifed as schools of further education. However, further education in Scotland tends not to be as comprehensive. The third type of short-cycle institutions is the series of colleges of education which offer degrees but also diplomas in primary and secondary teacher education to central institution diploma holders as well as courses leading to special qualifications, e.g., special education, and certificate courses in youth and community work. In other words, teachers colleges retain both university and nonuniversity qualities. In recent years, the teachers colleges have been cut back, some eliminated, and others made deparments of universities.

In Scotland, "further education" refers to any postcompulsory school offering a reasonable diversified program, including cultural and leisure courses and activities for adults and maintains a degree of flexibility in scheduling, programming, and instructional methodology. Educators in the higher education sector are initiating comversations on how to increase the holding power of postcompulsory institutions. Many feel that the education authority colleges - the local institutions - offer the best possibilities, together with the development of articulation avenues vertically through the system. (See Selected Bibliography).

Institutions visited

Department of Education (Statistics Office, Edinburgh)
University of Glasgow
College of Education (Aberdeen)
College of Education (Dundee)
Ruthven-Morey House College of Education.

ICELAND. Iceland has two university-level institutions, and several technical colleges. The TCs span secondary and university levels and include general education. In a further division, the TC departments are divided into vocational training and technical education. The former are one-and-one-half years duration, and the latter are three-years. College departments are also associated with university departments.

CANADA

Short-cycle higher education varies substantially throughout the provinces of Canada. Commentary on the history and development of the nonuniversity sector in each of the provinces will be presented alphabetically. Institutions visited and dates will also be included.

The history of short-cycle higher education in Canada is relatively brief. Until the early 1960s, the university, public and private, was the only higher education unit throughout the vast nation. While other types are now included, the national higher education scene still defies simple explanation because of uneven growth, lack of interprovince communication, diversity of functions, a weak central authority, and now the duo-cultural dilemma in Quebec that is not entirely confined to that eastern province.

Early in the history of junior college development in the U.S., Canadian educational policy makers were aware of the phenomenon, but the Canadian public was inclined to view the junior college movement as of questionable quality. As Dennison (1980) indicates, only Lethbridge, Alberta had a public comprehensive but short-lived junior college, by 1958. Beginning in the early 1960s, greater attention was directed to the U.S. experiences in adapting to rapid societal changes.

The Canadian version of the American community college movement was planned with the following characteristics prioritized: (1) comprehensive curriculums, including academic, occupational, continuing education, and remediation; (2) quality instruction and student counseling; (3) open admissions and minimal tuition; (4) nontraditional scheduling; and (5) responsiveness to community needs (Dennison, p. 5).

To open the discussion of activities in the provinces, a few generalities are offered. Institutes of technology spread over the vast nation under various titles are generally run directly by provincial governments. However, community colleges, notably in Brisish Columbia, have community advisory boards. These are often government appointed without student membership. Exceptions are the Quebec CEGEPs and Holland College on Prince Edward Island. Local advisory committees are uniformly utilized in vocational programs. Collective bargaining is almost universal, and provincial unions frequently dominate the scene.

On budget planning, universities usually receive block grants from provinces. Institutes of technology and community colleges are handled on line-by-line bases. Community colleges have less freedom than universities to make budgetary decisions, but more than institutes of technology. The governments control teacher qualification. Curriculum development is, in general, closely supervised by provincial ministries. Coordination is often the responsibility of a centralized system modelled after the British University Grants Committee. Direct allocation of resources to the universities as well as the colleges is most frequently the pattern in Eastern provinces. In the West, this role is more often held to curriculum matters, but in all cases throughout Canada the entire amount per institution is the decision of the provincial government.

As mentioned, the nation has no Ministry of Education and no national policy on education. Many feel that both are badly needed - long overdue. Attempts are

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underway to control heavy cenralization by creating buffer bodies between provincial government and institutions, e.g., college boards, commissions, and councils such as are now occurring in England. In some Canadian provinces these groups are advisory only to the Ministry, others have executive powers, but the strength of provincial governments remains very strong.

Between 1965 and 1975, five different postsecondary organization models were developed throughout Canada, with variations among models. Each of these will be described and compared in the profiles:

(1) Colleges of applied arts and technology were created in Ontario and a single college on Prince Edward Island (the smallest province). These were so-named to separate them from the special fields of agriculture and medical technology , and enrolled primarily those not eligible for the universities. Governance responsibilities were assigned to local boards.

(2) Alberta and British Columbia adopted a California-type model emphasizing university transfer and occupational education. Institutes of technology and other specialized postsecondary schools were also established. In British Columbia, short-cycle colleges also expanded recurrent education opportunities. Students with poorer secondary records were directed to government-operated vocational centers, similar to the area trade centers in California.

(3) Manitoba, New Brunswick, the Yukon and Northwest Territories, and Newfoundland developed a postsecondary vocational-technical model avoiding transfer education . Units in Newfoundland recently added transfer opportunities to its only university.

(4) The Saskatchewan version is referred to as a "broker" model. Community colleges "without walls" were placed in rural areas primarily to "broker" postsecondary opportunities provided by other institutions and community agencies. In urban areas, primarily Regina, Saskatoon, and Moose Jaw, occupational programs were, and still are, offered by technical institutes.

(5) The college system called the CEGEPs (Colleges d'Enseignement General et Professional - Colleges of General and Vocational Education) in Quebec is one of the unique systems worldwide. Two programs operate side-by-side; two years of academic transfer courses, and three years of occupational training (Gallagher & Dennison, 1995). Other features of the Quebec system will be described in the composite. (See Selected Bibliography).

Descriptions of the five models of Canada's short-cycle institutions suggest that the nonuniversity systems spread across that vast country vary enormously in mission and purpose. Titles reflect the multidimensional variability, ranging from "high school" to "university college." The frequency of "technology" in the institutional titles of Eastern and Atlantic provinces, and "community college" in the West, point to common governance/administration patterns and curricular emphases. A total of 189 institutions is shown on the membership of the Association of Canadian Community Colleges (ACCC), (ACCC, 1995-96 pp. 181-198). That number, however, is misleading since in virtually all provinces many institutions have branch campuses. In Ontario, for example, the Senaca College of Applied Arts and Technology (one of the provincial

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CAAT colleges) has 21 branches or campuses ranging from Skills Development to Communication Arts. Versatility and flexibility are obvious characteristics of the nation's nonuniversities.

ALBERTA (1945, 1957, 1972). The Public Junior Colleges Act of 1958 established the short-cycle system in Alberta where several college with comprehensive curriculums were established in the 1960s. Mount Royal College in Calgary became a public institution in 1966. After winning a very large support election, Mount Royal became one of the "show pieces" of Canadian higher education with an imposing campus and comprehensive offerings and services.

The Colleges Act of 1969 allowed the Alberta junior or community colleges greater autonomy. They became well accepted as equal partners with universities. Although university transfer remained the primary focus, occupational and adult/recurrent education were greatly expanded with Mount Royal taking the lead. Eleven other colleges are scattered over the large geographical area.

Institutions visited

Lethbridge College
Mount Royal College

BRITISH COLUMBIA (1942, 1945, 1972, 1975, 1988). Impetus for a short-cycle higher education system in British Columbia was provided by the MacDonald Plan (1962) that recommended establishment of community colleges throughout the province. Both community colleges and technical institutes were rather quickly developed. A provincial board served both universities and colleges. The latter had local college councils. The community colleges were, and remain, comprehensive institutions with strong student service units, and continue to develop in other respects like the California system of community colleges. The province has 25 short-cycle institutions. Vancouver Community College is by far the most populated district.

A credit banking system allowing students to apply courses taken in more than one community college toward an open university degree is a recent innovation expanding opportunities for transfer-interested students (Skolnik, 1995, in Selected Bibliography)..

Institutions visited

University of British Columbia
University of Victoria
Vancouver Community College

MANITOBA. In December 1969, the existing vocational schools were renamed community colleges. Career education is emphasized. Some block programs are transferable to the University of Manitoba and Brandon University. Manitoba's institutions are all community colleges, except for one French technical institute in Saint-Boniface.

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NEW BRUNSWICK (1964, 1982, 1988, 1995). The province has about a dozen technical/trade institutes called "community colleges." Half are English-speaking and half are French-speaking. Provincial leadership was recently changed from the Ministry of Education's Department of Continuing Education to the Department of Community Colleges. Regional councils are primarily informational. The college directors rely on the Ministry for policy decisions. All campuses are completely unionized - splitting collegiality, but providing a university rank system cherished by faculties. Extension officers are important in each of the colleges since there appears to be much interplay with industry. The directors or principals have a high degree of operational autonomy. Once budget requests are authorized, expenditures can be interchanged. Local advisory boards were abandoned when the system became a provincial division. Some, however, have been revived to strengthen the local focus of occupational programs. New Brunswick's nine short-cycle schools are all referred to as community colleges.

Institutions visited

University of New Brunswick (central campus)
Campbelltown Community College
Moncton Community College
St. Andrews Community College
St. Johns Community College.

NEWFOUNDLAND. All of the province's six institutions have multiple campuses. The districts are named for their curricular emphases, i.e., Applied Arts, Technology, Continuing Education, and Marine Institute of Memorial University.

NOVA SCOTIA (1964, 1988). Except for several specific identifiers, i.e., high school, adult vocational training, university college, agricultural college, and others, the 17 campuses of the provincial system are called community colleges.

ONTARIO (1964, 1992). Postsecondary short-cycle colleges were created in 1965. The Colleges of Applied Arts and Technology (CAATs) offered career-oriented postsecondary education for those not qualified for universtiy admission. often referred to as community colleges, the CAATs persisted with occupational programs for the first two decades. Universities remain aloof from articulation activity, doubting the quality of CAATs students and the secondary school orientation of the faculties. Although a small number of students move from the CAATS to universities, transfer as one of the missions of the colleges is still uncertain. For example, the province's Vision 2000 Task Force Report (1990) recommended closer ties between the CAATS and universities, but rejected academic transfer programs. An institute without walls, the task force felt, could bring the two higher education units closed together (Skolnik, 1995, see Selected Bibliography). As Ontario educators and politicians continue to argue, the province is falling behind in helping vocational-technical CAAT students broaden their horizons and preparing for the future.

Along with Quebec, Ontario's short-cycle system of 24 CAAT colleges is the most difficult to describe. In addition to Senaca College mentioned earlier, Humber CAAT has 10 separate campuses, most of which are specialist institutions in particular technical areas.

PRINCE EDWARD ISLAND (1988). Holland College with four separately-located schools is the single short-cycle institution on Prince Edward Island.

QUEBEC (1964, 1971, 1988). On the recommendation of the Parent Report, the General and Vocationl College Act of 1967 created an unique relationships among high schools colleges, and universities in Quebec. Colleges d'Enseignement General et Professional (CEGEP)/Colleges of General and Vocational Education were established. Students entering the CEGEPs after secondary school grade 11 were allowed to take two-year courses for university preparation or three-year technical-vocational program (Kintzer, 1973, p. 135). Completion of a two-year transfer curriculum remains today as the only way to gain university admission to complete the baccalaureate. Universities in Quebec are therefore upper-level institutions. "Upper-division" is the term used in the United States where 20 to 30 upper-division universities are recognized in about a dozen states. The Quebec system has expanded to include a number of private CEGEPs that have similar mandated relationships with upper-level universities. The provincial system has been regularly assessed and evaluated, and continues intact as an unique enterprise. (See Selected Bibliography).

Quebec's unique system numbers 17 public CEGEPs, and 27 private French colleges with a variety of titles. Virtually all 44 are a part of the system of preuniversity/preoccupational institutions described above.

SASKATCHEWAN. Saskatchewan began short-cycle higher education later than other provinces. Gallagher & Dennison (1995) describe the Saskatchewan approach as a broker model. The colleges did not have permanent faculties or facilities. In lieu of courses and curiculums, the institutions acted as contracting agencies with local businesses and organizations to extend credit for work taken elsewhere. Rather than developing colleges in the traditional sense, Saskatchewan's answer to postsecontary nonuniversity education is more an agency/community relationship. Saskatchewan's system of 10 districts are regional colleges by title. Many have several campuses. For example, the North West Regional College headquartered in North Battleford has seven education centres.

YUKON. The Yukon, as one would anticipate, has one short-cycle college, Yukon College at Whitehorse. Vocational-technical education is emphasized. Similar to schools in Manitoba, New Brunswick, and the Northwest Territory, transfer is deemphasized or avoided altogether.

Summary note: Canadian provinces approach the question of expanding higher education opportunities with a vast diversity of answers, from a more traditional stance in British Columbia and Alberta to the unique CEGEP system in Quebec and the brokering agency style in Saskatchewan. Institutions created throughout that vast decentralized country face the same problems identified around the world - the role of short-cycle schools in the global system of postsecondary education- and recognition and identity of the types of institutions in the process of being created to approach the goals.

THE UNITED STATES

As mentioned in the third paragraph of this essay, discussion of short-cycle higher education - the community college - in the United States will be curtailed because of the volume of material available. Several recent citations will be found in the general bibliography.

Suffice it to say here, forces external to the community college that emerged in the last two decades continue to influence the direction of these institutions. Increasing state government surveillance of public colleges in particular has resulted in a variety of patterns centered in state capitals, and a corresponding weakening of local units in financing, governance, and decisionmaking. Public community colleges or public vocational-technical institutes independent of those attached to senior colleges and universities are now found in virtually all of the 50 states. South Dakota is the only state without a public two-year college. Many of the public institutions continue to grow larger, and in general, have maintained comprehensive programs and services for students. Community college districts continue to experience difficulty in getting financial support for the total mission. Much energy is expended in searching for financial support from private sources.

Unified school districts no longer operate two-year colleges, giving way to independent districts, and to state systems. Multi-units, groupings of local colleges, have increased markedly, adding to the regionality of such institutions. Private two-year colleges often referred to as "junior colleges" have not expanded. Unfortunately, many have closed. Technical institutes found in some 35 states continue to gain energy as occupational education (sub-university level) maintains popularity. Senior colleges and universities that have two-year colleges - "university colleges" - are still found in about 10 states.

Developmental skills/remediation, internationalizing the curriculum, and particularly in border states, English as a second language, have joined the original four - career preparation, workforce training and workplace education, transfer preparation, and general education - as major institutional objectives.

Two-year (short-cycle) colleges in the United States continue to search for equality among higher education systems and to maintain a balance of functions to rally to community needs on the one hand, and state system requirements, on the other.

SPECULATIONS ON THE FUTURE OF THE NONUNIVERSITY MOVEMENT

Before speculating on the future of short-cycle higher education, we should again recall the reasons why SCHEs were originally created and developed: (1) to train middle-level manpower for employment, (2) to democratize higher education, responding to the needs of particular societies, and later to decentralize authority and responsibility from central governments to states or provinces, and (3) to initiate change quickly with innovative processes, vis a vis the inertia and resistance of universities to change.

Translating these objectives into action, three programmatic types were introduced with varying degrees of priority: (1) preparation for employment culminating after two or three years with certificates and diplomas, and increasing attention to shorter courses, especially in trades for which the preparation requires less formal schooling, and (3) preparation for university enrollment which in many countries meant permission to take university qualifying exams, but also to gain university advanced standing from authorized SCHE courses.

Three decades of mostly trial-and-error experiences by nations on every continent have brought negative assessments:

(1) Preparation for work - Short-cycle systems that have been exclusively vocational-technical with little or no attention to general studies have fallen short of meeting the objective. Graduates may be technically well prepared, but lack flexibility in attempts to adapt to rapidly changing facilities and work conditions. Over time, the institutions, themselves, remained "second class citizens," misunderstood by universities, legislative bodies, and the society, in general. Some were driven into anti- or counter-positions in competition with universities and public schools for government support and local esteem. In the competition, the more the "antis" asked for, the less they got. SCHE leaders are learning to approach the competition with the sense of simply representing a new and important dimension in the nation's higher education system.

(2) Community education - In the last two decades, SCHEs have moved with greater determination into community education, emphasizing noncredit programs and activities. Life long learning, virtually overlooked by the original SCHE group, is in focus. The "community" portion of the community college idea is also secure..

(3) Preparation for university basic enrollment or for advanced standing credit - As we review the successful articulation/transfer arrangements gradually emerging over the world, we conclude that no single ideal plan is right for all nations. Openesss remains the indispensible quality for negotiating and maintaining a system for exchanging students and credits. The rapid diversification of higher education throughout the world is a major cause for increasing complexity of articulation/transfer relationships. The alleged inferior quality of SCHE courses and instructors is still a major obstacle to university acceptance of credits from short-cycle institutions. The question of quality intensifies as SCIs give more attention to vocational-technical training - the less noble work - and to continuing education. In some countries, universities are taking on short-cycle responsibilities (short courses in mid-management or business), as short-cycle institutions strengthen research and weaken practical application. Broader understanding among all constituent groups is the key to lasting progress in developing articulation/transfer policies.

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The rapid increase of consortia early initiated in the United States as the communication vehicle with developing nations is one of the optimistic signs leading into the new century. U.S. educators are now less likely to act as missionaries of the good news about community college education, and instead as consultant members of teams. This is especially noticeable in Latin and South American countries. Several consortia, along with the International/Intercultural Committee of the American of Community Colleges, are leaders in perfecting the consortium method. These include Tri-State Consortium which evolved into the College Consortium for International Studies in 1975, and the College Consortium for International Development (CCID) founded in 1976. The former was started by colleges in Pennsylvania, New Jersey, and New York, and the latter in Florida. The work of these organizations has encouraged groups in many other states to create a variety of international programs, i.e., faculty and student exchanges, special programs at home and at foreign campuses, starting new institutions, and many other cooperative ventures. American corporations are also members of consortia teams, offering private assistance, equipment, and material. Educational Innovation Systems Incorporated (EDUSYSTEMS) is one of these that represent equipment manufacturers. (See Richard Greenfield, ed. , 1990, Summer, New Directions for Community Colleges, in the General Bibliography for details).

Technology training offered by industry not sponsored by formal educational systems was particularly noted throughout Pacific Rim countries, as well as a rapid growth of collaborative arrangements with government or private institutions, often referred to as institutes of technology. These are emerging as multinational associations - nations from several continents joining to provide basic or upgrading experiences for practicing engineers, and others. In some instances, these arrangements bypass the formal granting of two-year degrees, but "human resource development" is also found in multinational programs.

Earning credits for electronically delivered coursework, a rapidly growing phenomenon in the United States, complicates, even eliminates, traditional patterns of transfer. "The Virtual University" is a prominent example. Scheduled to be operating in 1997, this online "institution" announced by governors of several western states. will begin only as a credit-holding organization. Colleges, first in western states, will be invited to list distance-learning courses in the Virtual University catalog. Credits earned in such classes held on or off campuses will be booked and held for single or multiple-college transfer.

The significance of this development automatically affects traditional transfer routines since, for one thing, college and university jurisdictions automatically disappear. State regulatory agencies cannot eliminate unscrupulous organizations or those with poor quality programs, but advocates hope that competition among institutions will help to maintain course quality. A regulatory document called "Principles of Good Practice for Electronically Offered Academic Degree and Certificates Programs" has been released. The Western Interstate Commission for Higher Education (WICHE) is responsibile for launching this unique enterprise.

The American Association of Community Colleges has consistently shown leadership in short-cycle higher education. In 1930, the Junior College Journal carried the first of many articles on junior college developments - "The Junior College in Greece." In 1970, under Roger Yarrington's editorship, the association published reprints of selected articles that appeared since 1964. The same year, AAJC co-sponsored an assembly on the movement at the University of Hawaii East-West Center. About 25 nations were represented. Worldwide interest shown for the potential of middle-manpower postsecondary education gave impetus

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Extending and deepening the understanding of Short-Cycle Higher Education is paramount for the most experienced countries, including Canada, England, France, Germany, and Norway, as well as the host of other nations interested in launching nonuniversity systems. The search for identity and power in all countries is the most compelling direction. Recent events in such places as Argentina, England, Mexico, and in East European nations indicate increased dialogue among educators, legislators, and community leaders. More-experienced nations, notably the United States through public and private agencies (consortia of colleges and universities) are now active in the national dialogues. Principles and plans are being introduced as policies, and while the resulting hardware is not as yet perfected, community colleges in Argentina and Hungary, fachhochschulen in the new Czech and Slovak republics, and other developments described in this essay suggest a promising future for Short-Cycle Higher Education worldwide.

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SHORT-CYCLE HIGHER EDUCATION: SUMMARY OF ORGANIZATIONAL PATTERNS

As described in the first paragraph of this essay, higher education reform systems appeared as a restructuring or an expansion of secondary education, expansion of existing higher education units into comprehensive universities, or as new institutions separate from both secondary and university systems. All three options can still be found in some countries. The third, new institutions both public and private, is perhaps the most compelling option, but representative of only one organizational form of nonuniversities found worldwide.

The following chart shows some of the institutional titles and locations discussed in national composites. Several adjustments and additions to the Cohen terminology and locations are made by the author:

Institution	Country
College of Applied Arts and Technology	Canada (Ontario)
College d'Enseignment Général et Professional (CEGEP)	Canada (Quebec)
College of Further Education	England, Scotland, Wales
Community College	Canada (British Columbia, Alberta)
	New Zealand
	Thailand
	United States
Fachhochschule	Germany
Folk High School	Denmark
Higher School (Vise Skole)	Yugoslavia (Serbia, Croatia, Slovakia, Montenegro)
Higher Technicians' Section	France
Institut Teknologi	Indonesia
Junior College	Japan
	Republic of China
	United States
Regional (or District) College	Norway
	Israel
Regional Technical College	Ireland
Special Training School	Japan
Terciarios	Argentina
Technical College (or Institute)	United States
Technical or Further Education (TAFE)	Australia
Technological Education Institute	Greece
Two-year Vocational University	People's Republic of China
University Institute of Technology (IUT)	France
Uppersecondary School	Sweden
Volkhochschule	Germany
Workers' College	People's Republic of China

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